# Table of Product List

| Webpage Publication Date | Product Name | Model Name | Country |
|---|---|---|---|
| 2025.04 | Galaxy A36 5G | SM-A366U | US |
| 2025.03 | Galaxy A26 5G | SM-A266B | EU |
| 2025.03 | Galaxy A56 5G | SM-A566B | EU |
| 2025.03 | Galaxy A36 5G | SM-A366B | EU |
| 2025.02 | Galaxy S25 Ultra | SM-S938B | EU |
| 2025.02 | Galaxy S25 Ultra | SM-S938U | US |
| 2025.02 | Galaxy S25 + | SM-S936B | EU |
| 2025.02 | Galaxy S25 + | SM-S936U | US |
| 2025.02 | Galaxy S25 | SM-S931B | EU |
| 2025.02 | Galaxy S25 | SM-S931U | US |
| 2025.02 | Galaxy A16 5G | SM-A166B | EU |
| 2025.02 | Galaxy A16 5G | SM-A166U | US |

| Webpage Publication Date | Product Name | Model Name | Country |
|---|---|---|---|
| 2024.10 | Galaxy S24 FE | SM-S721B | EU |
| 2024.10 | Galaxy S24 FE | SM-S721U | US |
| 2024.08 | Galaxy Z Fold6 | SM-F956B | EU |
| 2024.08 | Galaxy Z Fold6 | SM-F956U | US |
| 2024.08 | Galaxy Z Flip6 | SM-F741B | EU |
| 2024.08 | Galaxy Z Flip6 | SM-F741U | US |
| 2024.06 | Galaxy A35 5G | SM-A356B | EU |
| 2024.06 | Galaxy A55 5G | SM-A556B | EU |
| 2024.04 | Galaxy M15 5G | SM-M156B | TK |
| 2024.02 | Galaxy XCover7 | SM-G556B | EU |
| 2024.02 | Galaxy S24 Ultra | SM-S928B | EU |
| 2024.02 | Galaxy S24 Ultra | SM-S928U | US |
| 2024.02 | Galaxy S24+ | SM-S926B | EU |
| 2024.02 | Galaxy S24+ | SM-S926U | US |
| 2024.02 | Galaxy S24 | SM-S921B | EU |
| 2024.02 | Galaxy S24 | SM-S921U | US |
| 2024.02 | Galaxy A25 5G | SM-A256B | EU |
| 2024.02 | Galaxy A25 5G | SM-A256U | US |
| 2024.02 | Galaxy A15 | SM-A155E | SEA |
| 2024.02 | Galaxy A15 5G | SM-A156U | US |
| 2024.02 | Galaxy A15 5G | SM-A156E | SEA |

# Table of Product List

| Product Name | Model Name | Country |
|---|---|---|
| Galaxy A26 5G | SM-A266B | EU |
| Galaxy A56 5G | SM-A566B | EU |
| Galaxy A36 5G | SM-A366B | EU |
| Galaxy S25 Ultra | SM-S938B | EU |
| Galaxy S25 Ultra | SM-S938U | US |
| Galaxy S25 + | SM-S936B | EU |
| Galaxy S25 + | SM-S936U | US |
| Galaxy S25 | SM-S931B | EU |
| Galaxy S25 | SM-S931U | US |
| Galaxy Z Fold Special Edition | SM-F958N | KR |
| Galaxy A16 | SM-A165F | EU |
| Galaxy A16 5G | SM-A166B | EU |
| Galaxy A16 5G | SM-A166U | US |
| Galaxy S24 FE | SM-S721B | EU |
| Galaxy S24 FE | SM-S721U | US |
| Galaxy Z Flip6 | SM-F7410 | CN |
| Galaxy Z Fold6 | SM-F956B | EU |
| Galaxy Z Fold6 | SM-F956U | US |
| Galaxy Z Flip6 | SM-F741B | EU |
| Galaxy Z Flip6 | SM-F741U | US |
| Galaxy M35 5G | SM-M356B | SWA |

| Product Name | Model Name | Country |
|---|---|---|
| Galaxy A35 5G | SM-A356B | EU |
| Galaxy A55 5G | SM-A556B | EU |
| Galaxy M15 5G | SM-M156B | TK |
| Galaxy XCover7 | SM-G556B | EU |
| Galaxy S24 Ultra | SM-S928B | EU |
| Galaxy S24 Ultra | SM-S928U | US |
| Galaxy S24+ | SM-S926B | EU |
| Galaxy S24+ | SM-S926U | US |
| Galaxy S24 | SM-S921B | EU |
| Galaxy S24 | SM-S921U | US |
| Galaxy A25 5G | SM-A256B | EU |
| Galaxy A25 5G | SM-A256U | US |
| Galaxy A15 | SM-A155E | SEA |
| Galaxy A15 5G | SM-A156U | US |
| Galaxy A15 5G | SM-A156E | SEA |
| Galaxy M34 5G | SM-M346B | SWA |
| Galaxy M44 5G | SM-M446K | KOR |
| Galaxy S23 FE | SM-S711B | EU |
| Galaxy S23 FE | SM-S711U | US |
| Galaxy Z Flip5 | SM-F731B | EU |
| Galaxy Z Flip5 | SM-F731U | US |
| Galaxy Z Fold5 | SM-F946B | EU |
| Galaxy Z Fold5 | SM-F946U | US |
| Galaxy M54 5G | SM-M546B | UAE |
| Galaxy M14 5G | SM-M146B | UAE |
| Galaxy A54 5G | SM-A546U | US |
| Galaxy A54 5G | SM-A546B | EU |

| Product Name | Model Name | Country |
|---|---|---|
| Galaxy A34 5G | SM-A346B | EU |
| Galaxy A24 | SM-A245F | EU |
| Galaxy A14 | SM-A145F | EU |
| Galaxy A23 5G | SM-A236V | US |
| Galaxy S23 Ultra | SM-S918B | EU |
| Galaxy S23 Ultra | SM-S918U | US |
| Galaxy S23+ | SM-S916B | EU |
| Galaxy S23+ | SM-S916U | US |
| Galaxy S23 | SM-S911B | EU |
| Galaxy S23 | SM-S911U | US |
| Galaxy Z Fold4 | SM-F936U | US |
| Galaxy Z Flip4 | SM-F721U | US |
| Galaxy XCover6 Pro | SM-G736U | US |
| Galaxy M13 | SM-M135F | EU |
| Galaxy A73 5G | SM-A736B | EU |
| Galaxy A23 | SM-A235F | EU |
| Galaxy M53 5G | SM-M536B | EU |
| Galaxy M33 5G | SM-M336B | EU |
| Galaxy M23 5G | SM-M236B | EU |
| Galaxy A13 | SM-A135F | EU |
| Galaxy S22 Ultra | SM-S908U | US |
| Galaxy S22+ | SM-S906U | US |
| Galaxy S22 | SM-S901U | US |
| Galaxy S21 FE | SM-G990B | EU |
| Galaxy S20 FE | SM-G781B | EU |
| Z Fold3 | SM-F926B | EU |
| Z Flip3 | SM-F711B | EU |
| A12 | SM-A127F | EU |
| Galaxy Note 20 Ultra | SM-N986B | EU |

# Life Cycle Assessment for Galaxy A36 5G(US)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

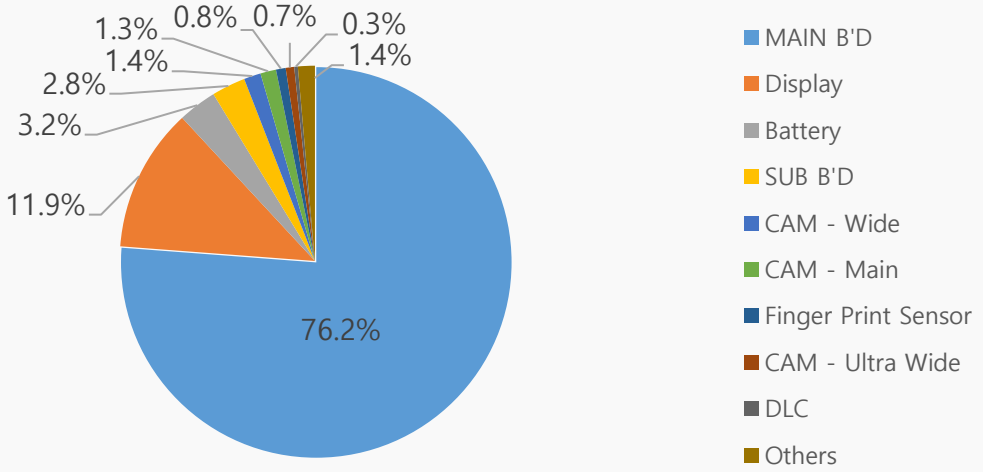
LCA Report Issuance Date : Apr. 02, 2025

Webpage Publication Date of Summary of LCA : Apr. 25, 2025

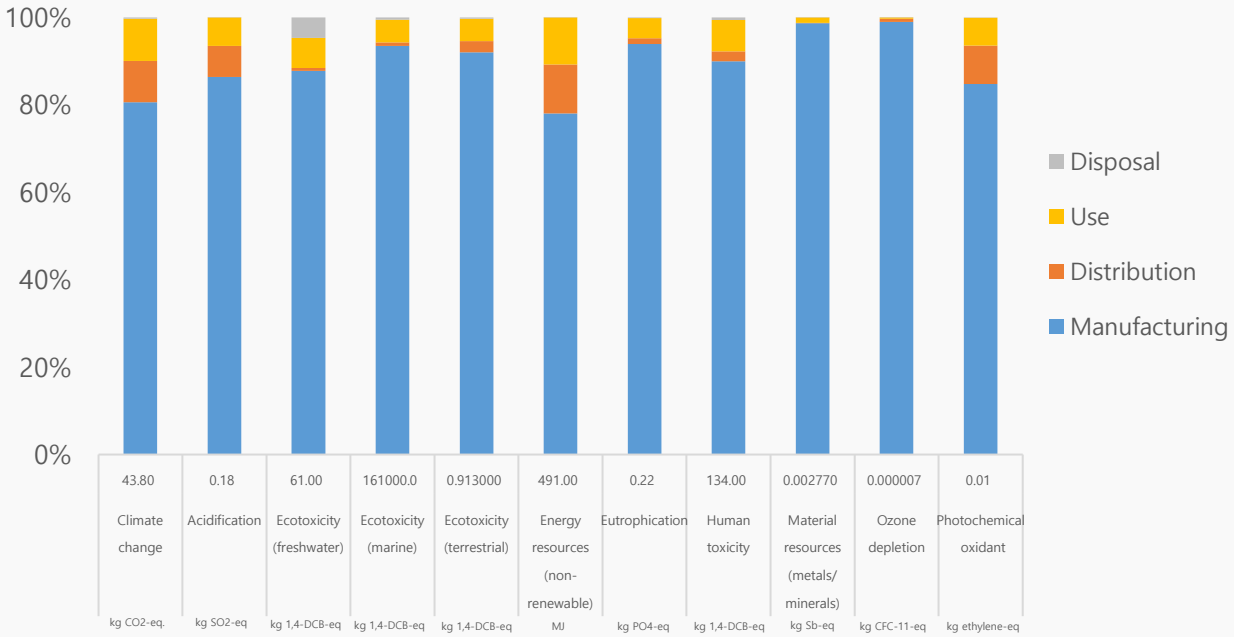
## Product Features

| | | |
|---|---|---|
| Model name | SM-A366U (Galaxy A36 5G) | |
| Dimension (mm) | 162.9 x 78.2 x 7.4 | |
| Display (mm) | 170.1 | |
| Weight (g) | Product & Acc. | 227.73 |
| | Packages | 120.81 |

## Global Warming Impact Profile

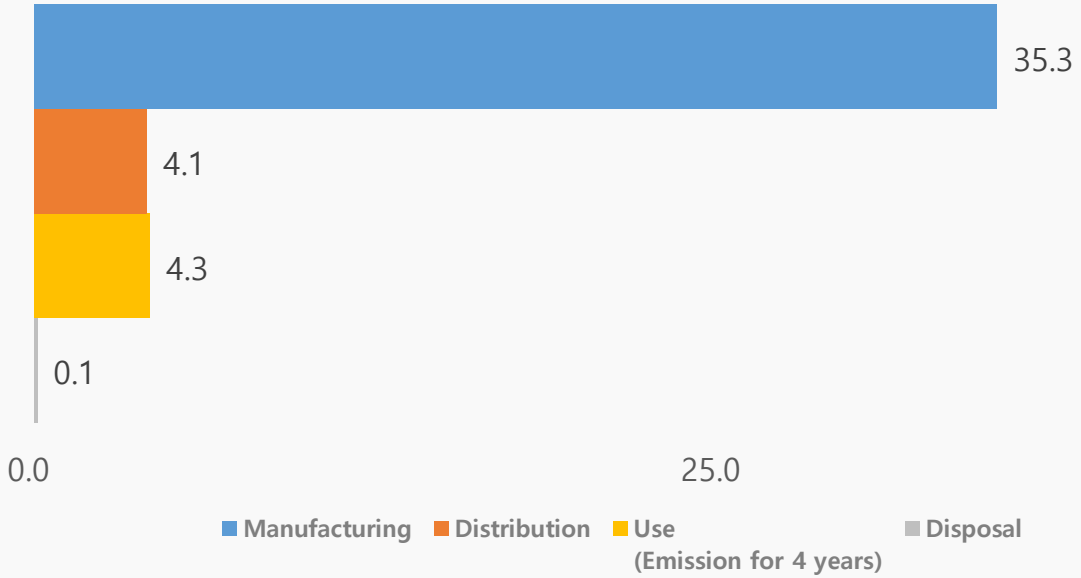



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A26 5G(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

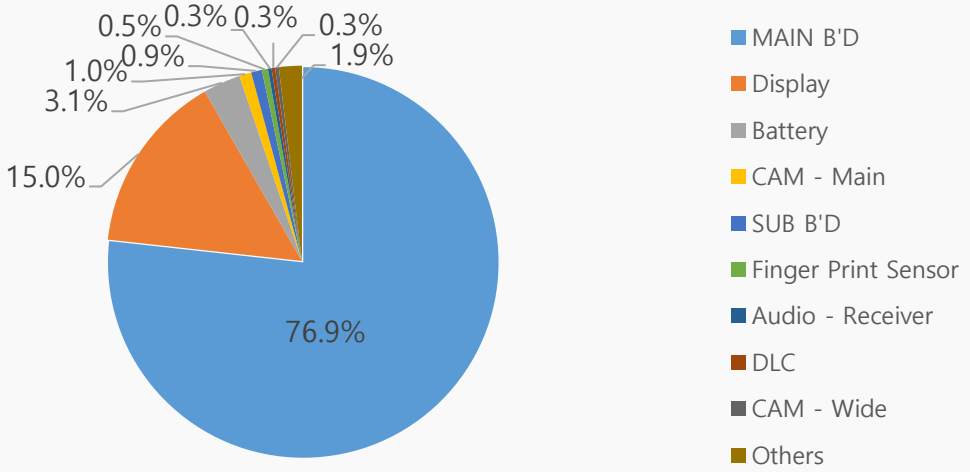
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

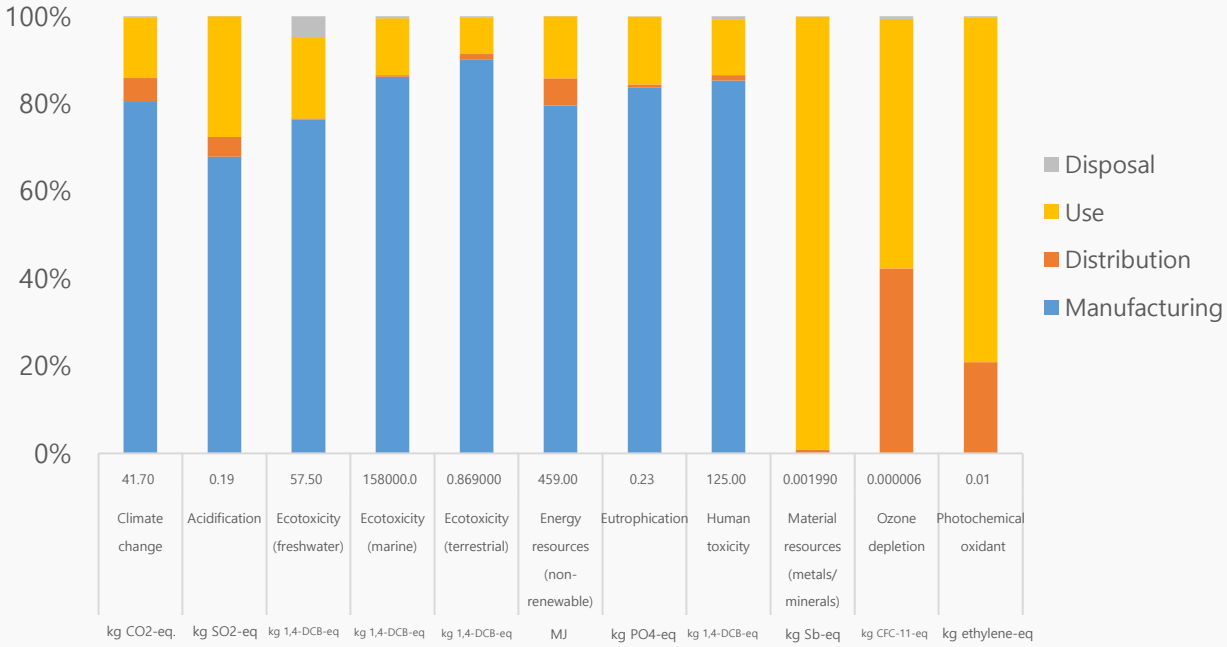
## Product Features

| | | |
|---|---|---|
| Model name | SM-A266B (Galaxy A26 5G) | |
| Dimension (mm) | 164.0 x 77.5 x 7.7 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 220.15 |
| | Packages | 77.74 |

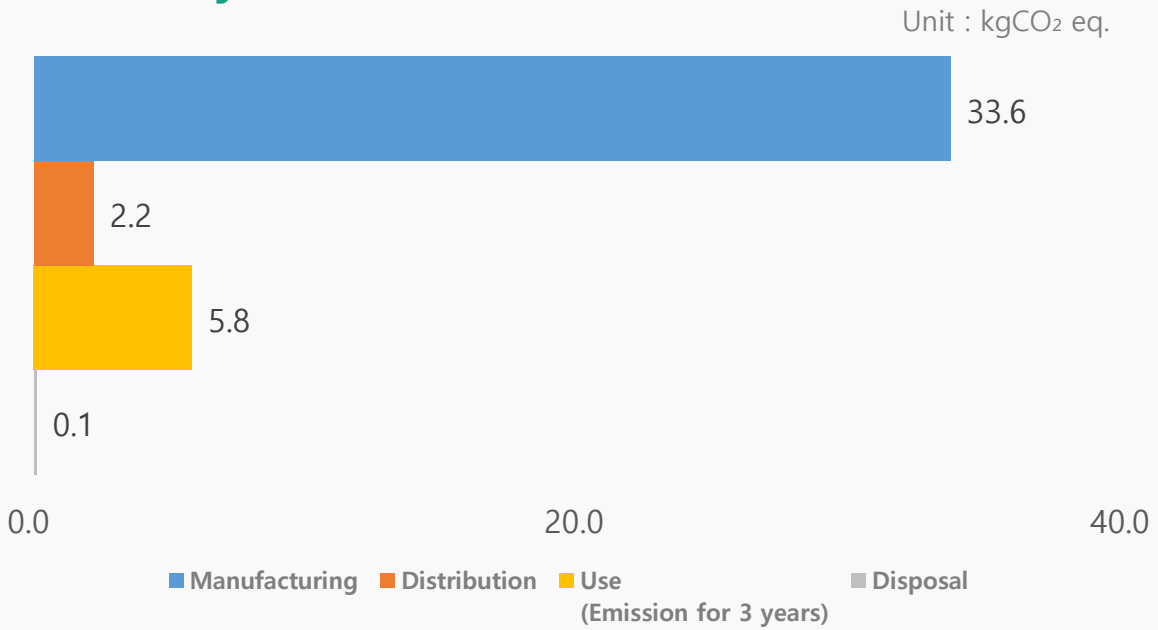
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A56 5G(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

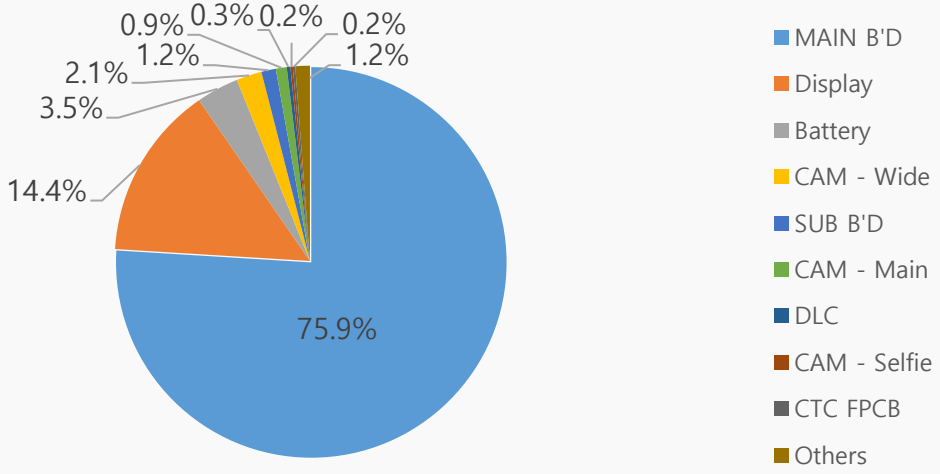
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

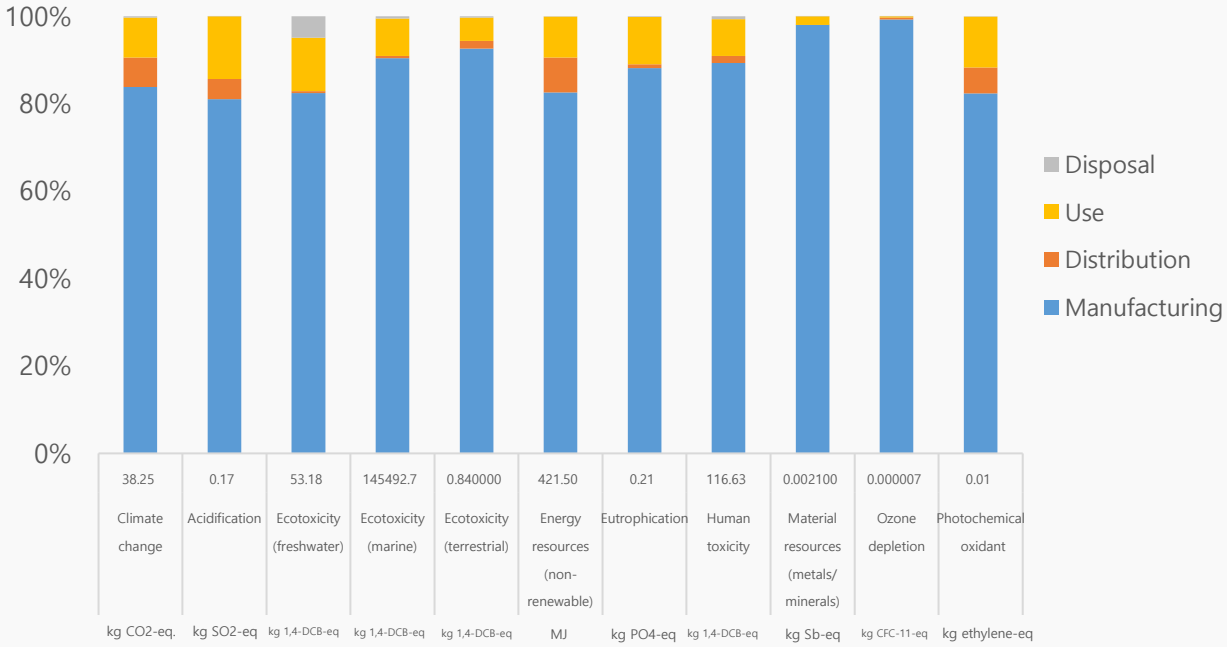
## Product Features

| | | |
|---|---|---|
| Model name | SM-A566B (Galaxy A56 5G) | |
| Dimension (mm) | 162.2 x 77.5 x 7.4 | |
| Display (mm) | 170.1 | |
| Weight (g) | Product & Acc. | 230.57 |
| | Packages | 119.80 |

## Global Warming Impact Profile

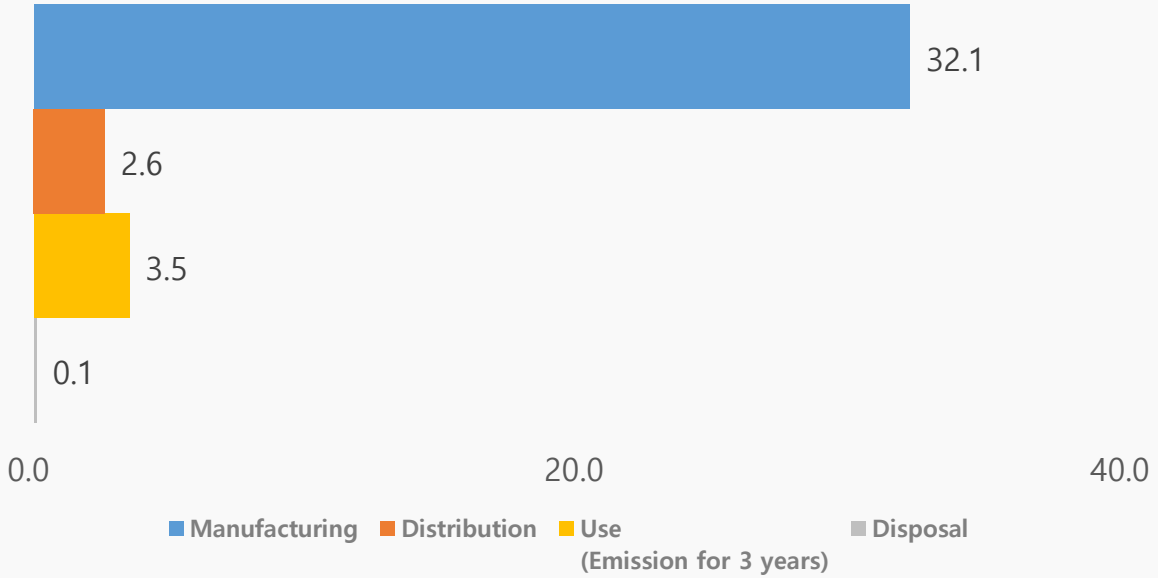



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A36 5G(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

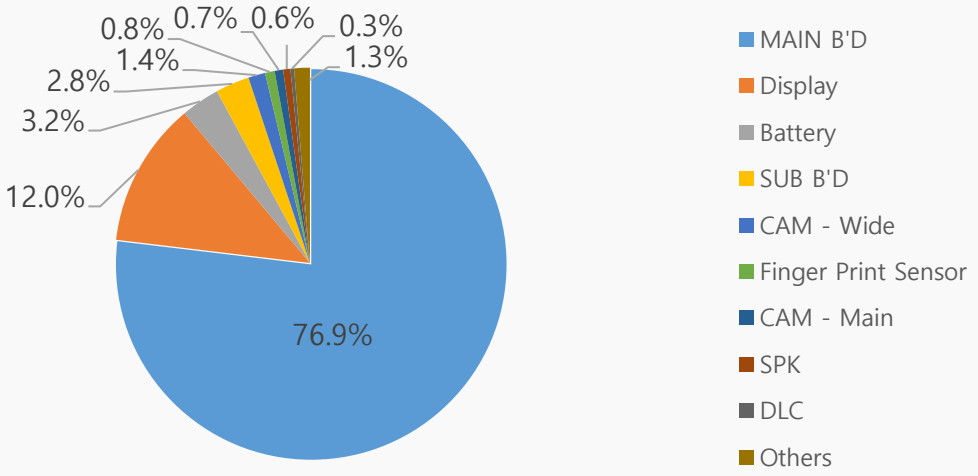
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

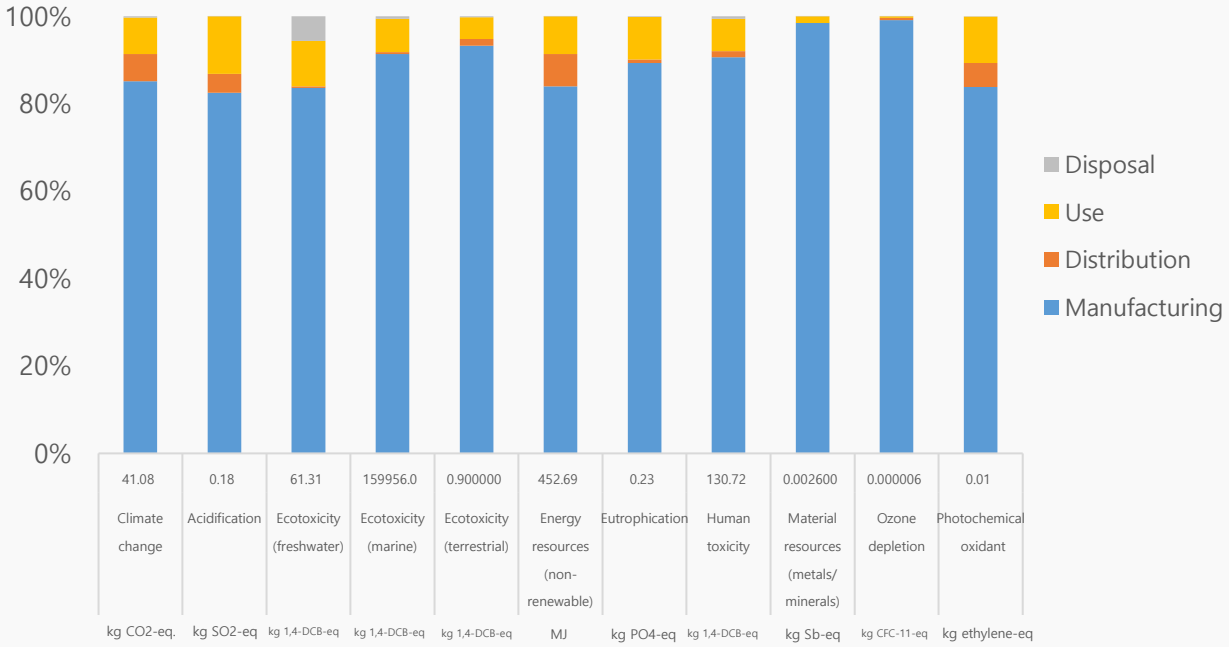
## Product Features

| | | |
|---|---|---|
| Model name | SM-A366B (Galaxy A36 5G) | |
| Dimension (mm) | 162.9 x 78.2 x 7.4 | |
| Display (mm) | 170.1 | |
| Weight (g) | Product & Acc. | 227.22 |
| | Packages | 121.32 |

## Global Warming Impact Profile

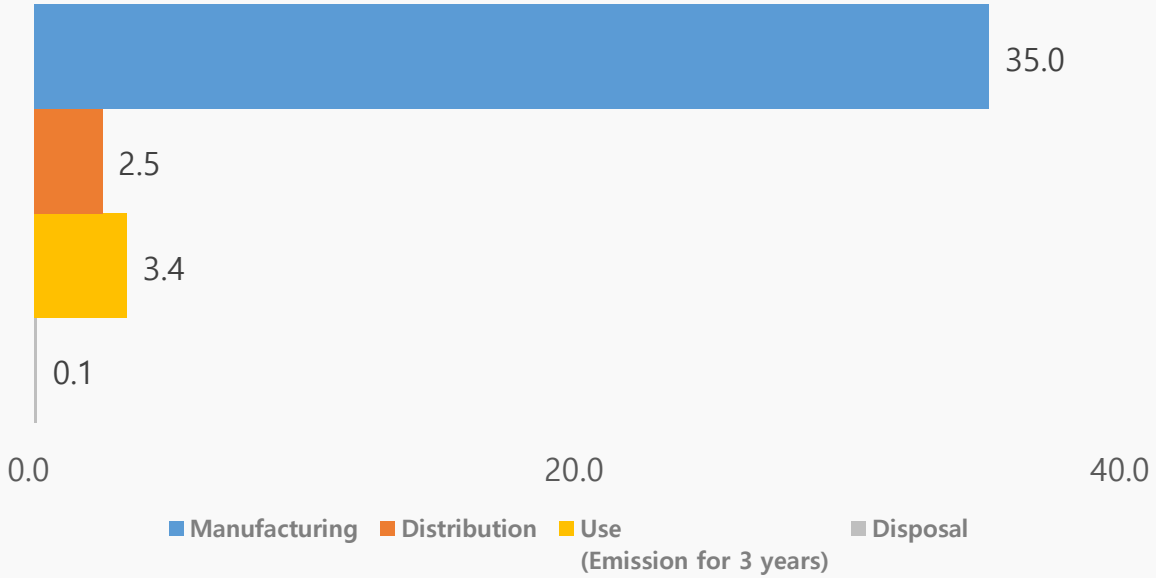



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25 Ultra(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

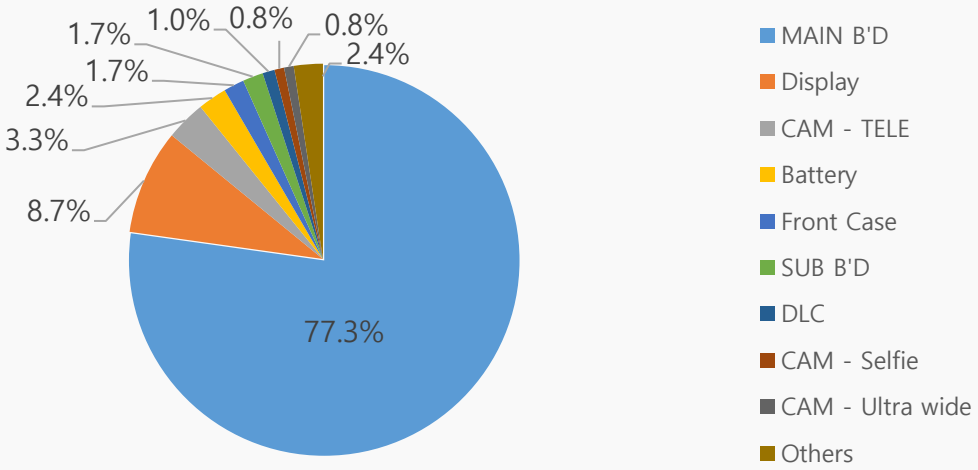
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

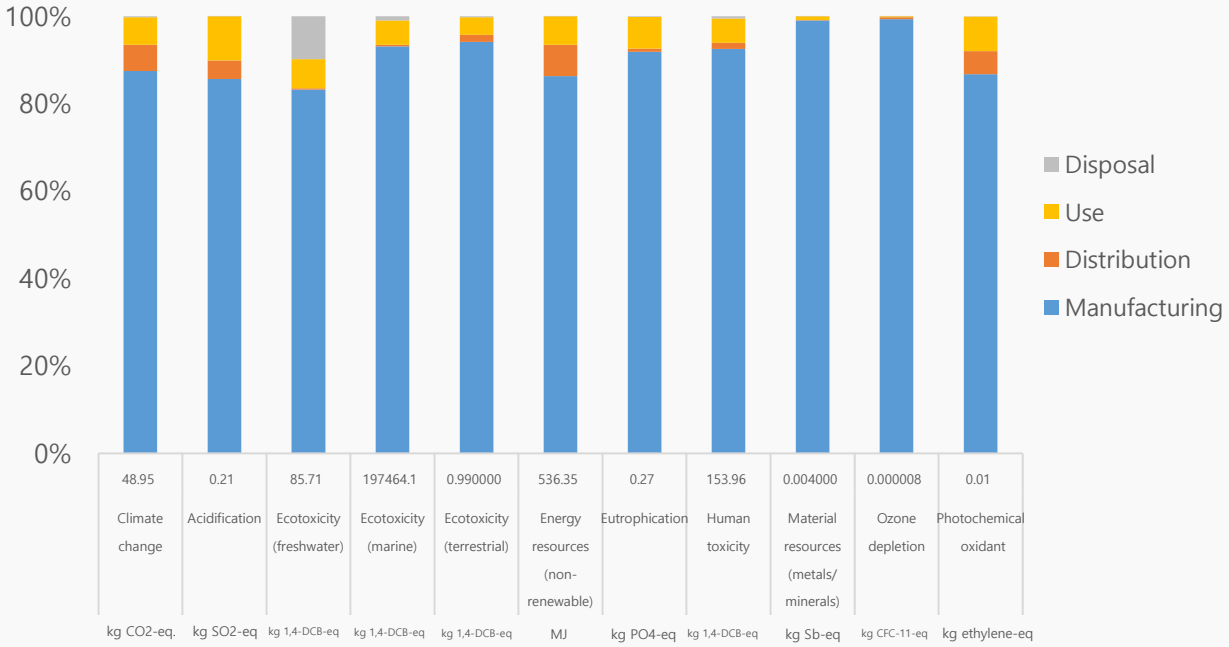
## Product Features

| | | |
|---|---|---|
| Model name | SM-S938B (Galaxy S25 Ultra) | |
| Dimension (mm) | 162.8 x 77.6 x 8.2 | |
| Display (mm) | 174.2 | |
| Weight (g) | Product & Acc. | 240.57 |
| | Packages | 158.99 |

## Global Warming Impact Profile

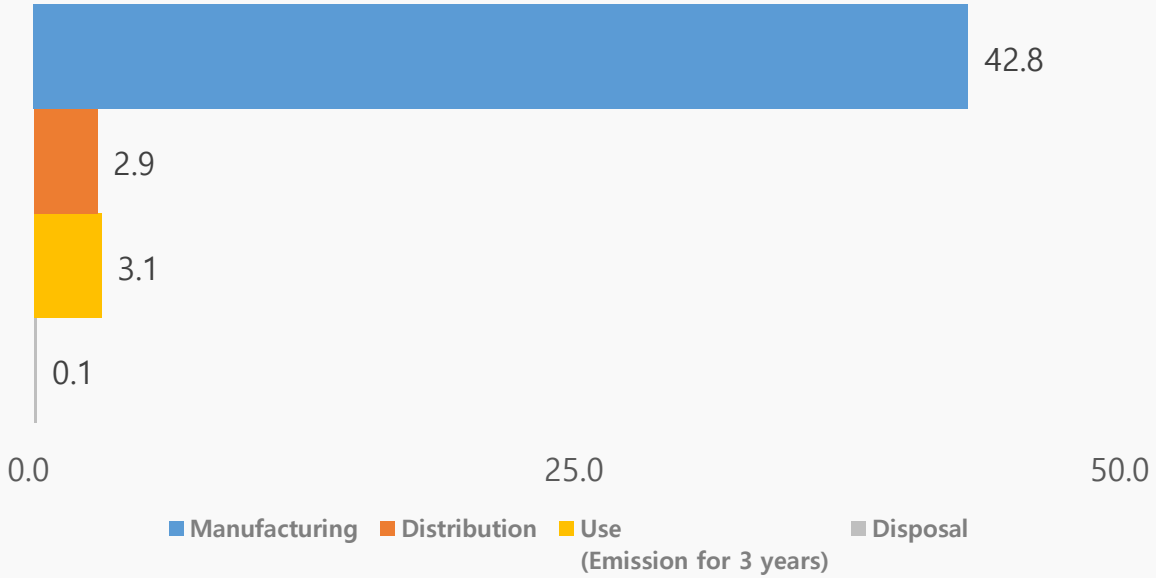



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25 Ultra(US)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

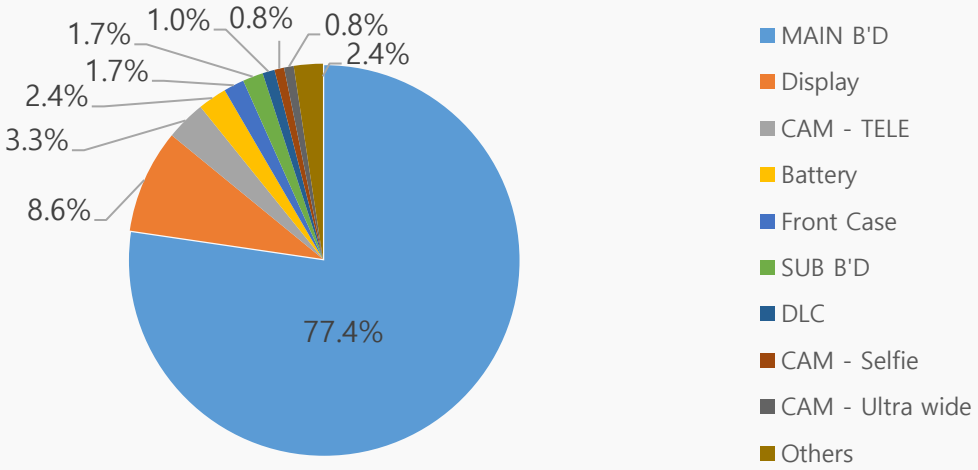
LCA Report Issuance Date : Jan. 22, 2025

Webpage Publication Date of Summary of LCA : Feb. 14, 2025

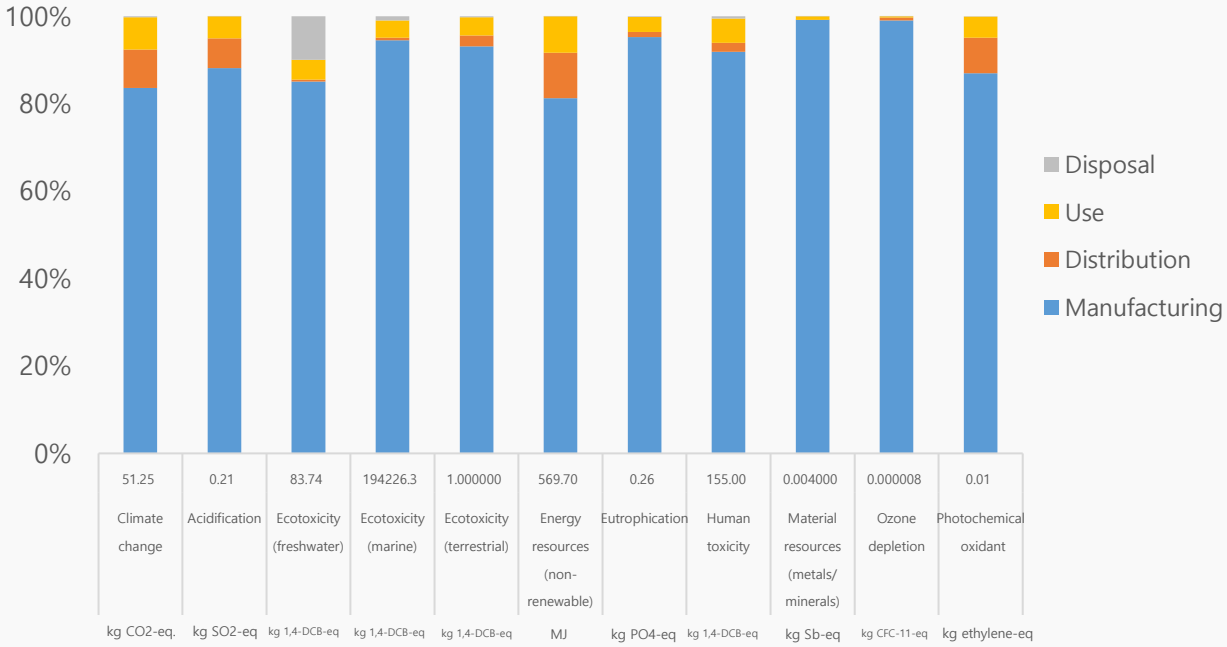
## Product Features

| | | |
|---|---|---|
| Model name | SM-S938U (Galaxy S25 Ultra) | |
| Dimension (mm) | 162.8 x 77.6 x 8.2 | |
| Display (mm) | 174.2 | |
| Weight (g) | Product & Acc. | 241.27 |
| | Packages | 147.49 |

## Global Warming Impact Profile

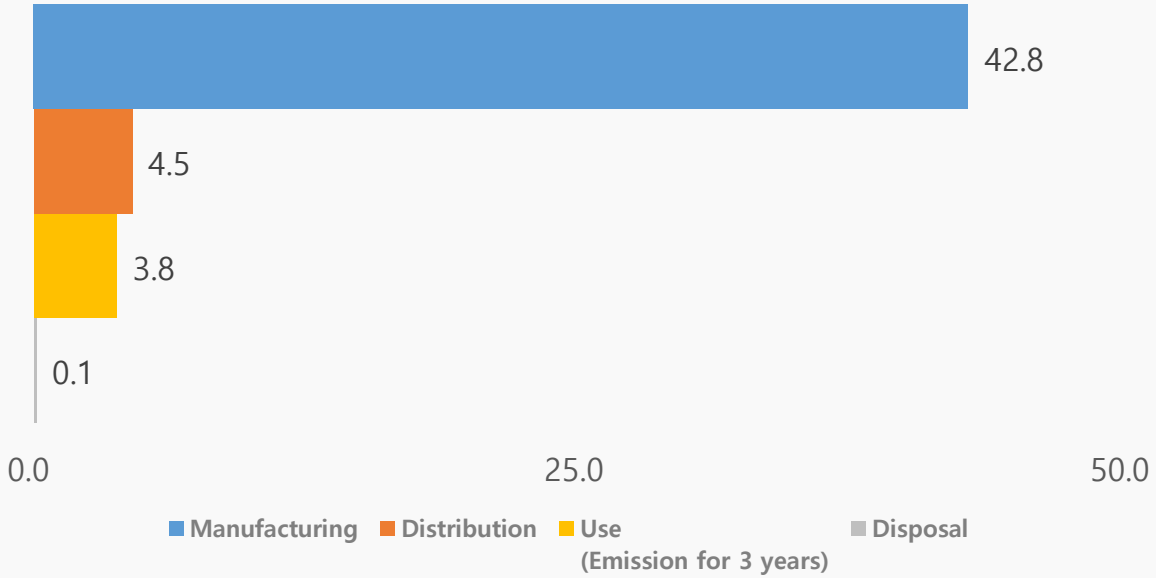



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25+(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

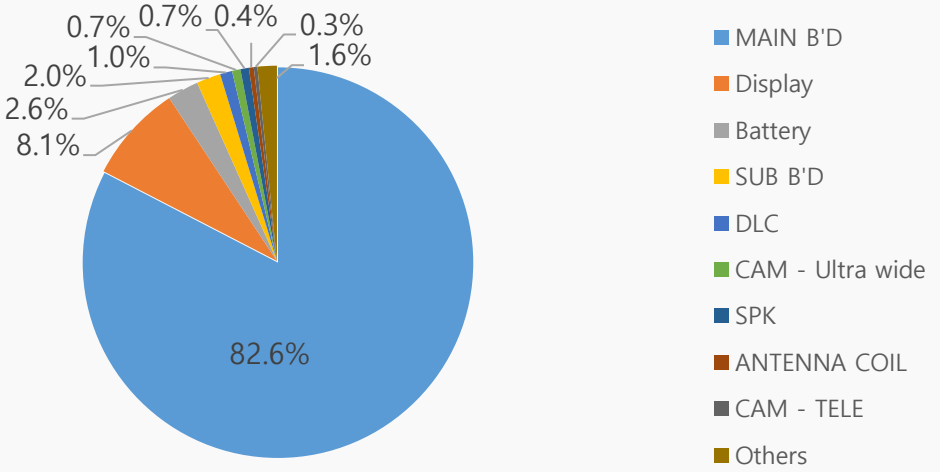
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

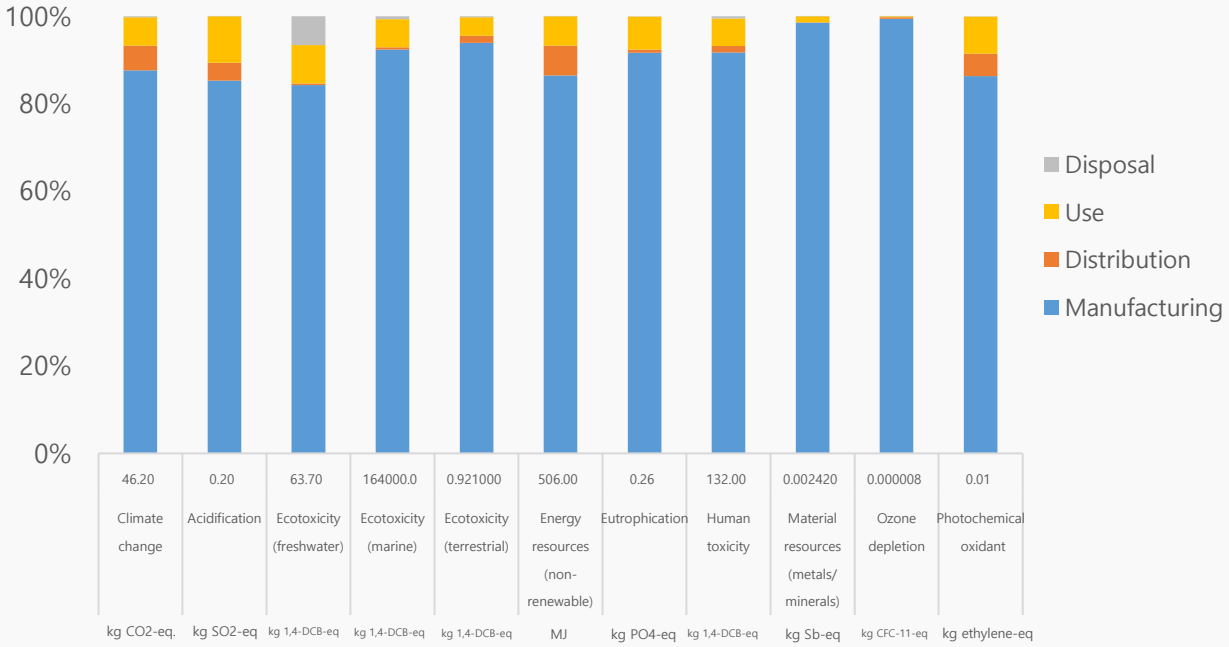
## Product Features

| | | |
|---|---|---|
| Model name | SM-S936B (Galaxy S25+) | |
| Dimension (mm) | 158.4 x 75.8 x 7.3 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 210.25 |
| | Packages | 145.97 |

## Global Warming Impact Profile

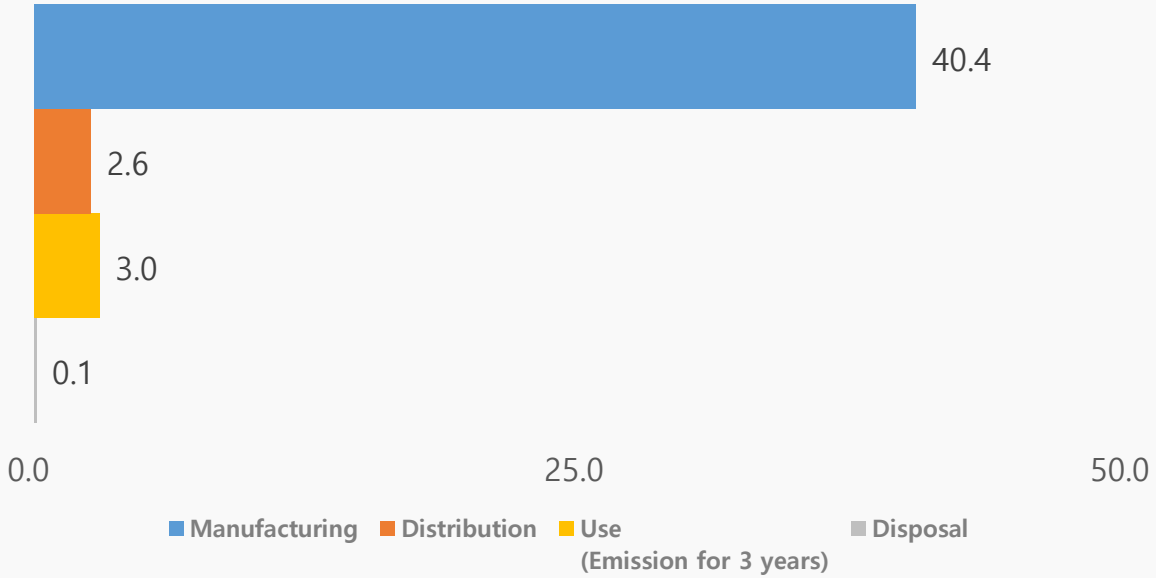



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25+(US)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

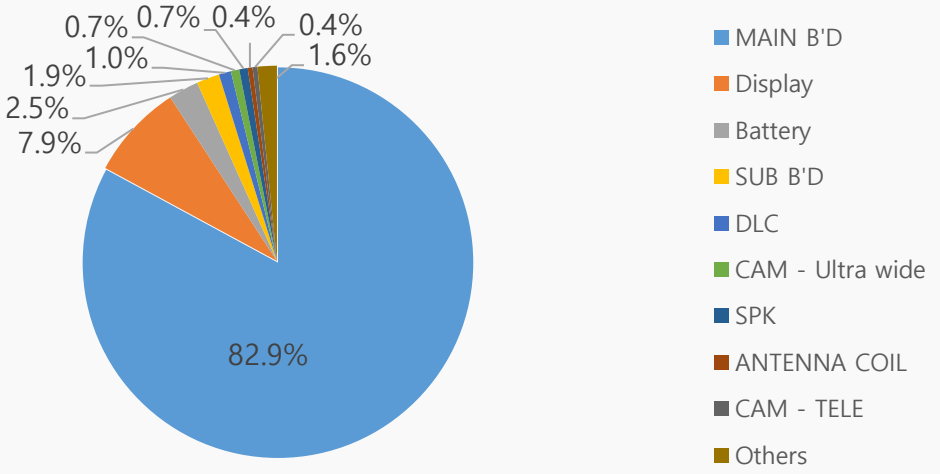
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

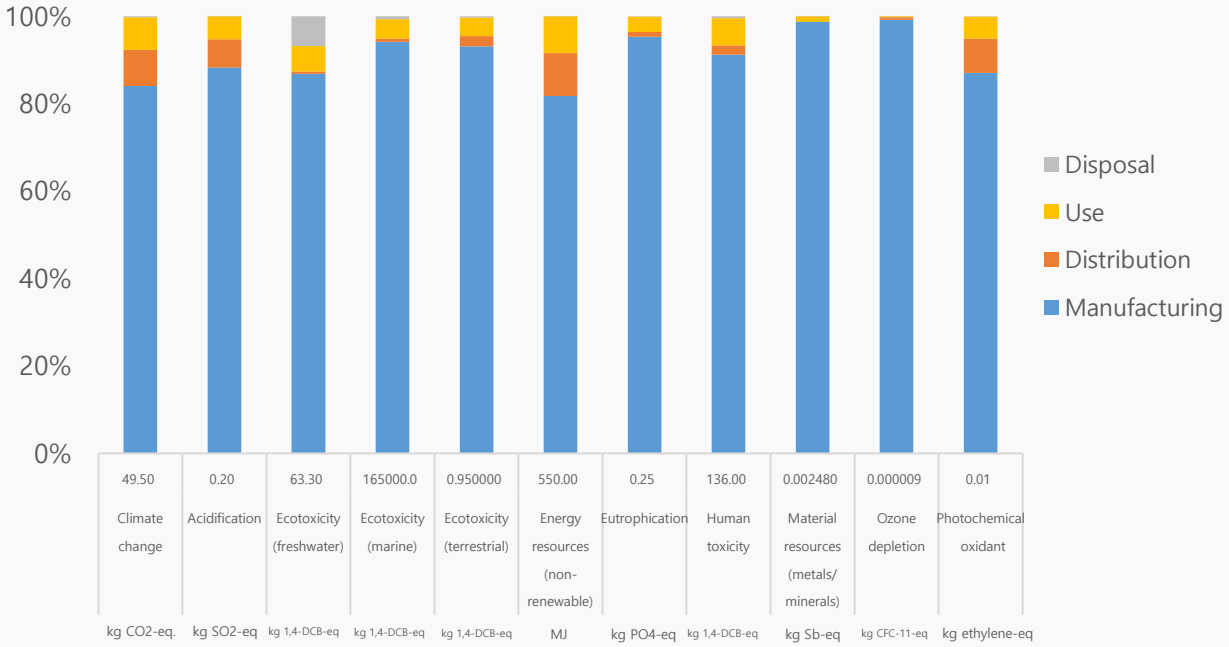
## Product Features

| | | |
|---|---|---|
| Model name | SM-S936U (Galaxy S25+) | |
| Dimension (mm) | 158.4 x 75.8 x 7.3 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 212.42 |
| | Packages | 140.7 |

## Global Warming Impact Profile

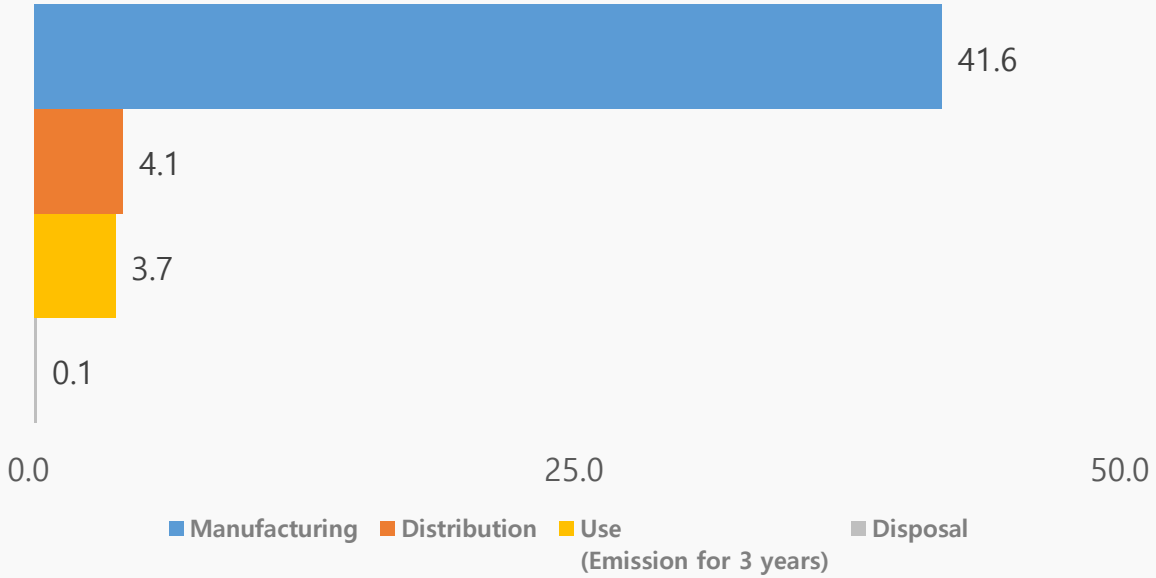



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25(EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

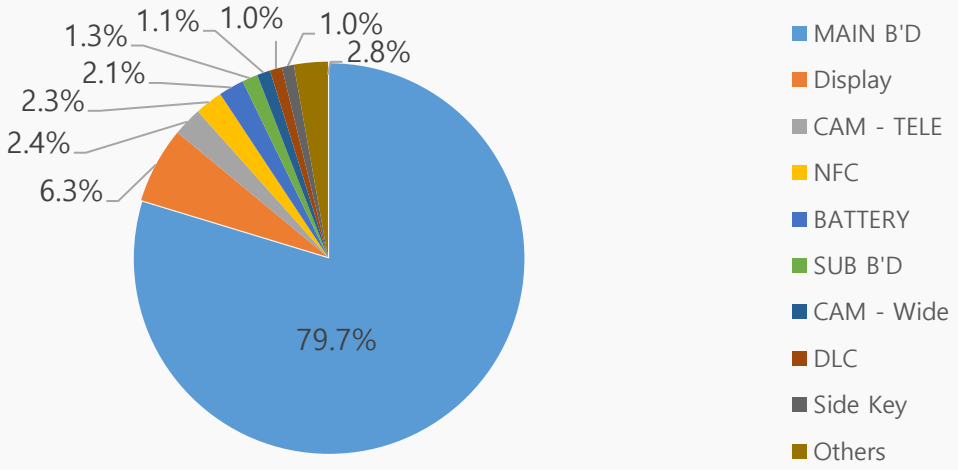
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

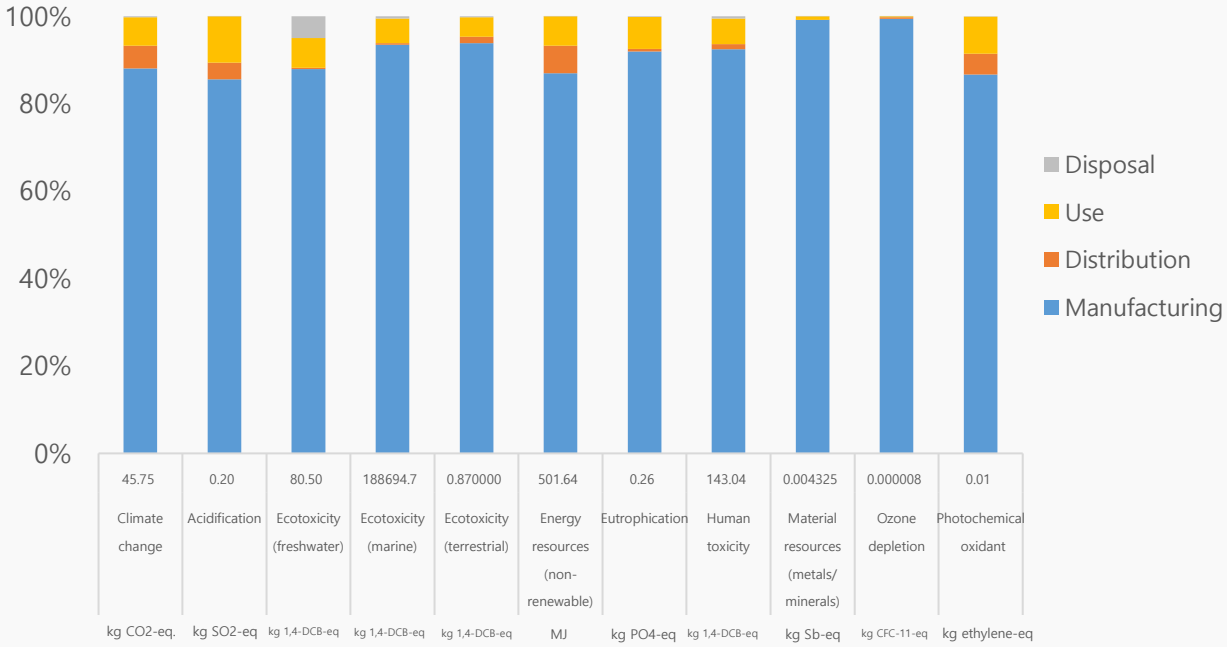
## Product Features

| | | |
|---|---|---|
| Model name | SM-S931B (Galaxy S25) | |
| Dimension (mm) | 146.9 x 70.5 x 7.2 | |
| Display (mm) | 156.4 | |
| Weight (g) | Product & Acc. | 188.68 |
| | Packages | 139.22 |

## Global Warming Impact Profile

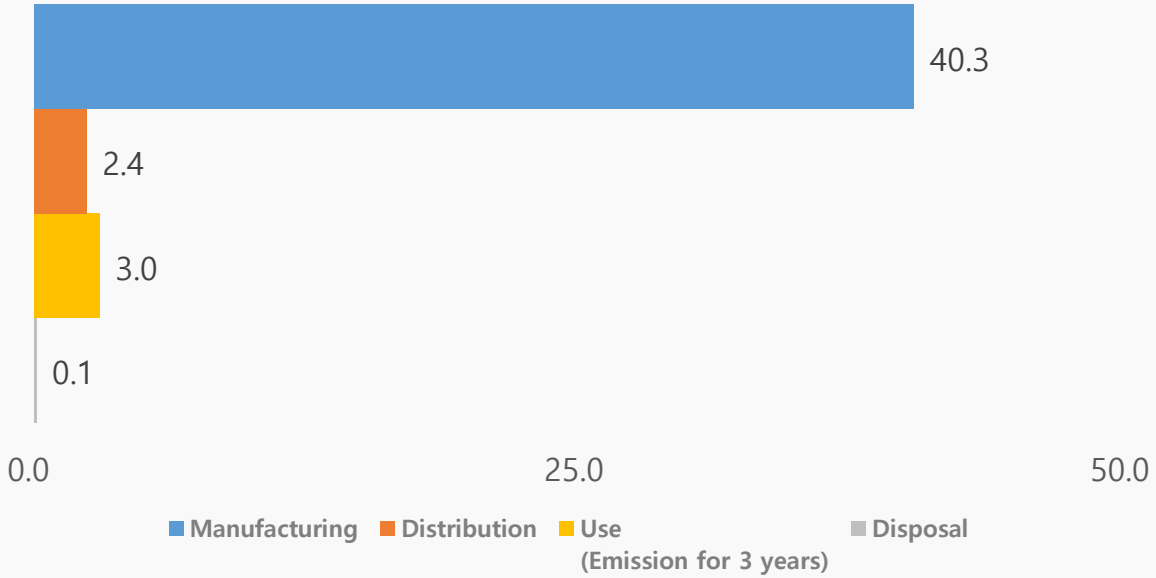



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S25(US)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

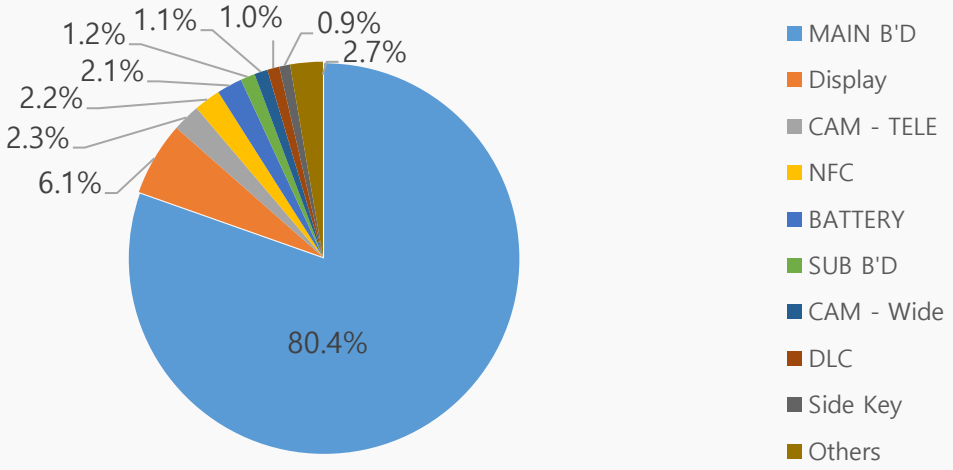
LCA Report Issuance Date : Jan. 22, 2025

Webpage Publication Date of Summary of LCA : Feb. 14, 2025

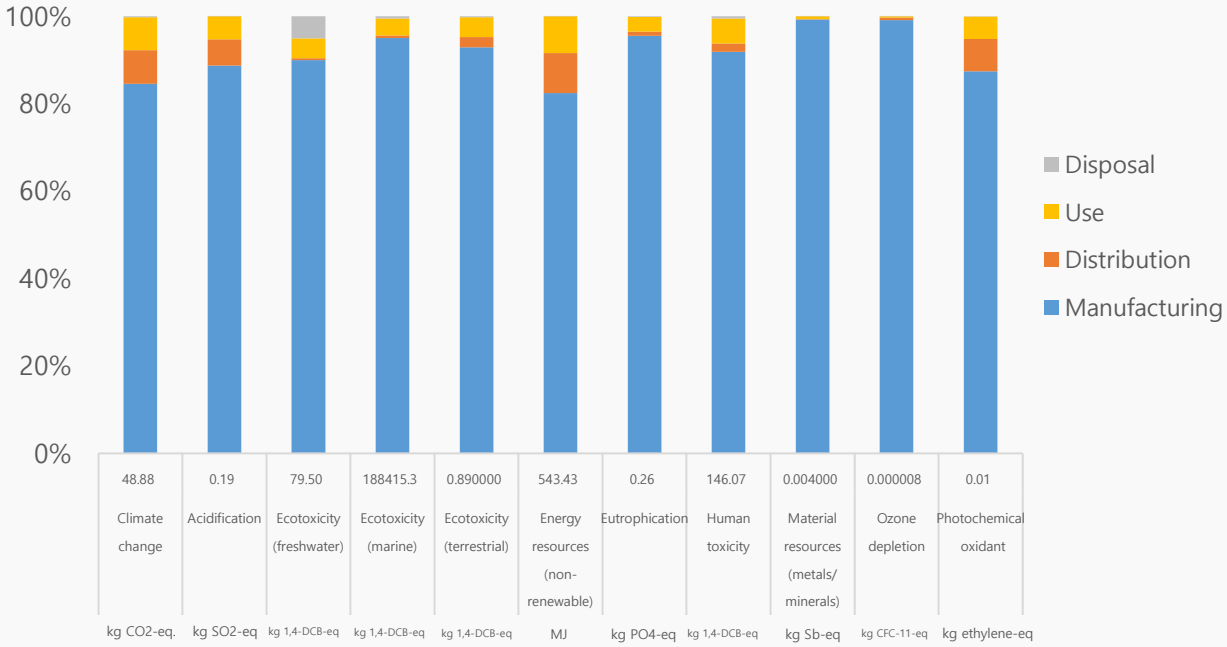
## Product Features

| | | |
|---|---|---|
| Model name | SM-S931U (Galaxy S25) | |
| Dimension (mm) | 146.9 x 70.5 x 7.2 | |
| Display (mm) | 156.4 | |
| Weight (g) | Product & Acc. | 188.48 |
| | Packages | 128.12 |

## Global Warming Impact Profile

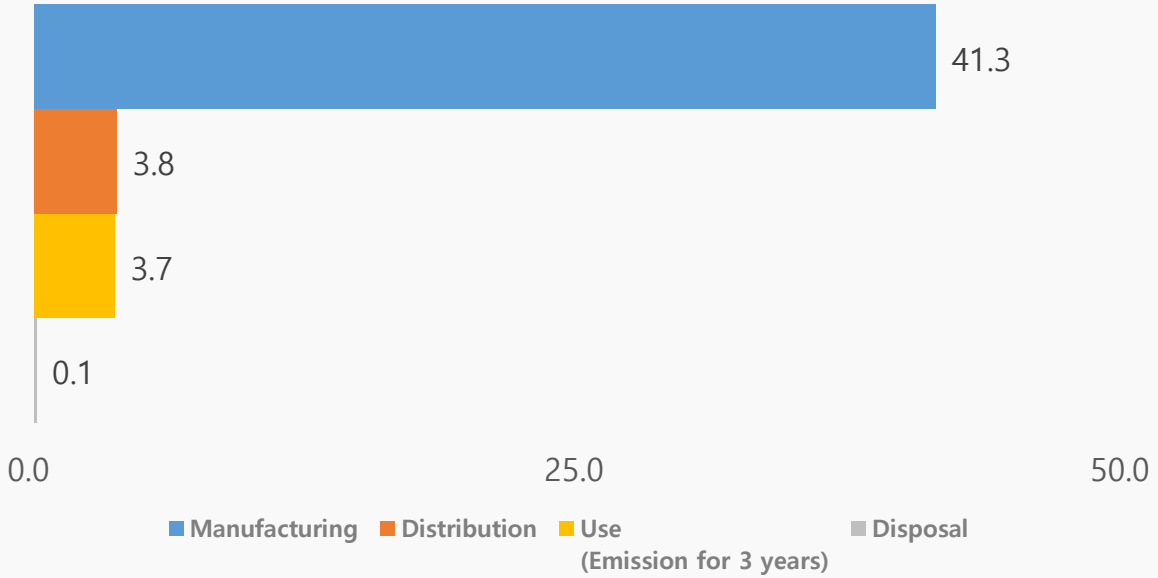



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Fold Special Edition (KR)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

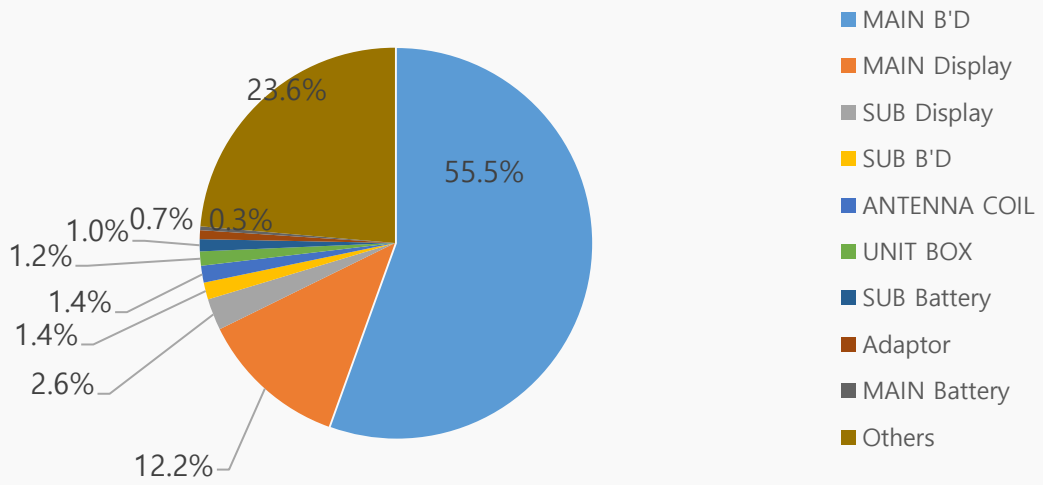
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to Korea |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

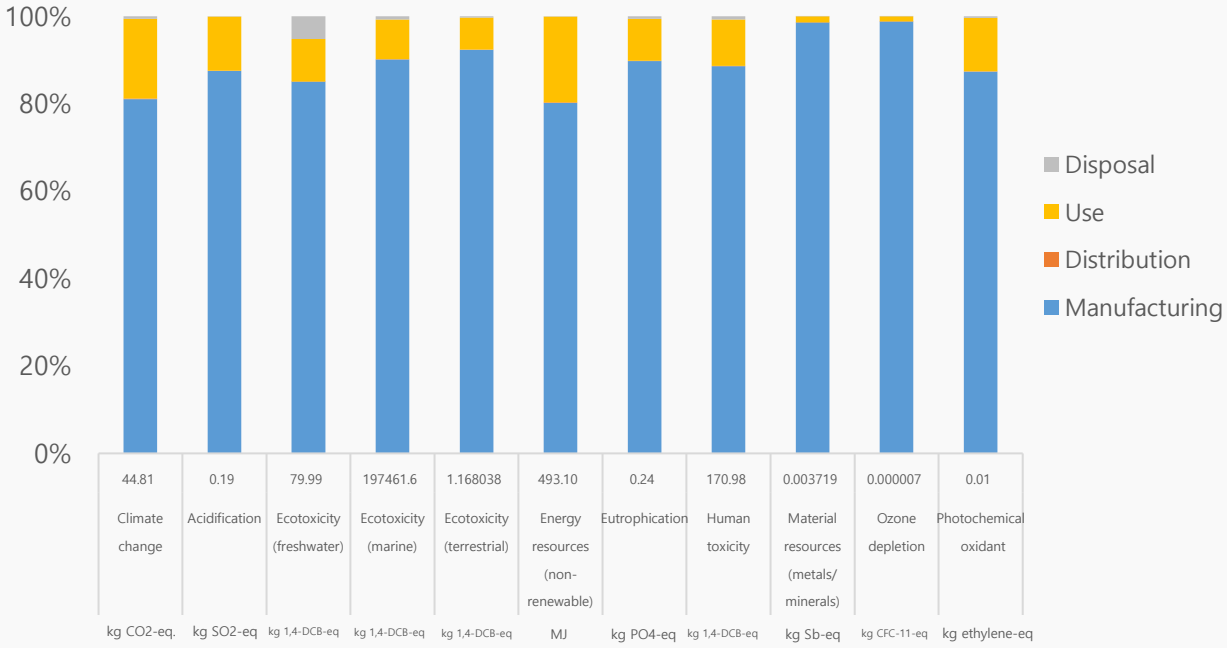
## Product Features

| | | |
|---|---|---|
| Model name | SM-F958N (Galaxy Z Fold Special Edition) | |
| Dimension (mm) | 157.9 x 142.6 x 4.9 | |
| Display (mm) | 203.1 | |
| Weight (g) | Product & Acc. | 351.90 |
| | Packages | 843.10 |

## Global Warming Impact Profile

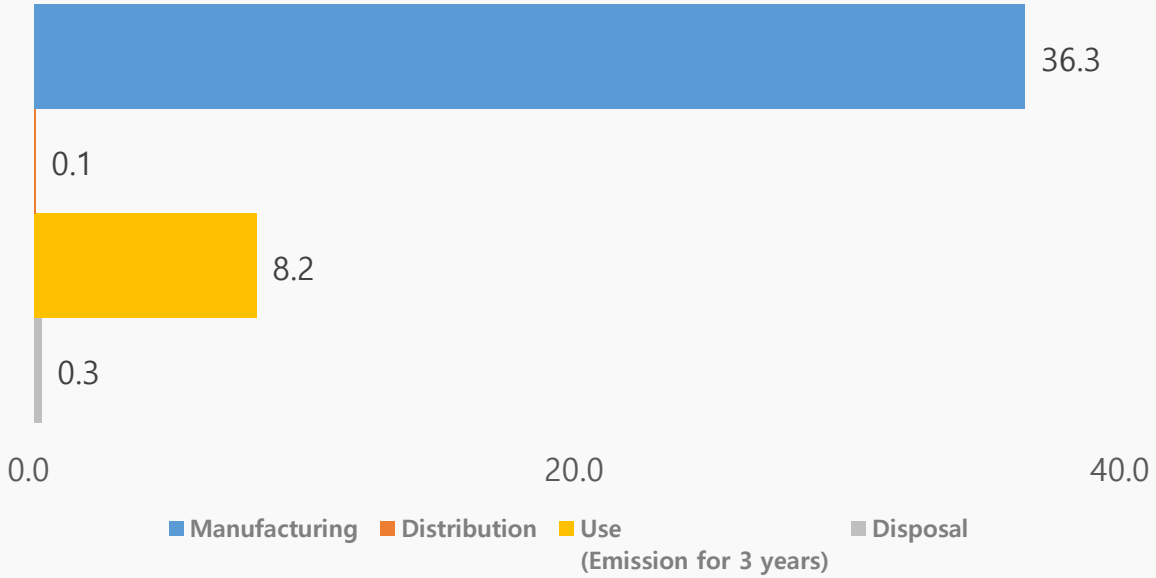



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A16 (EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

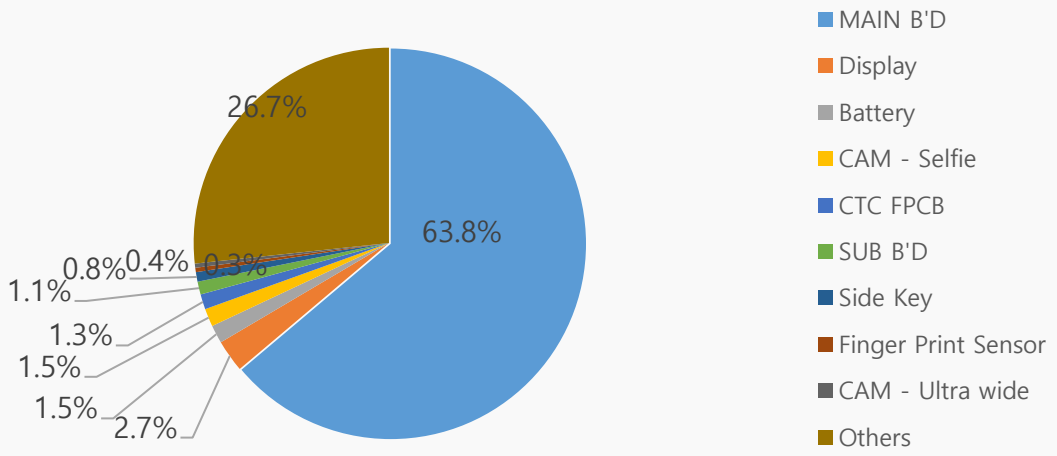
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

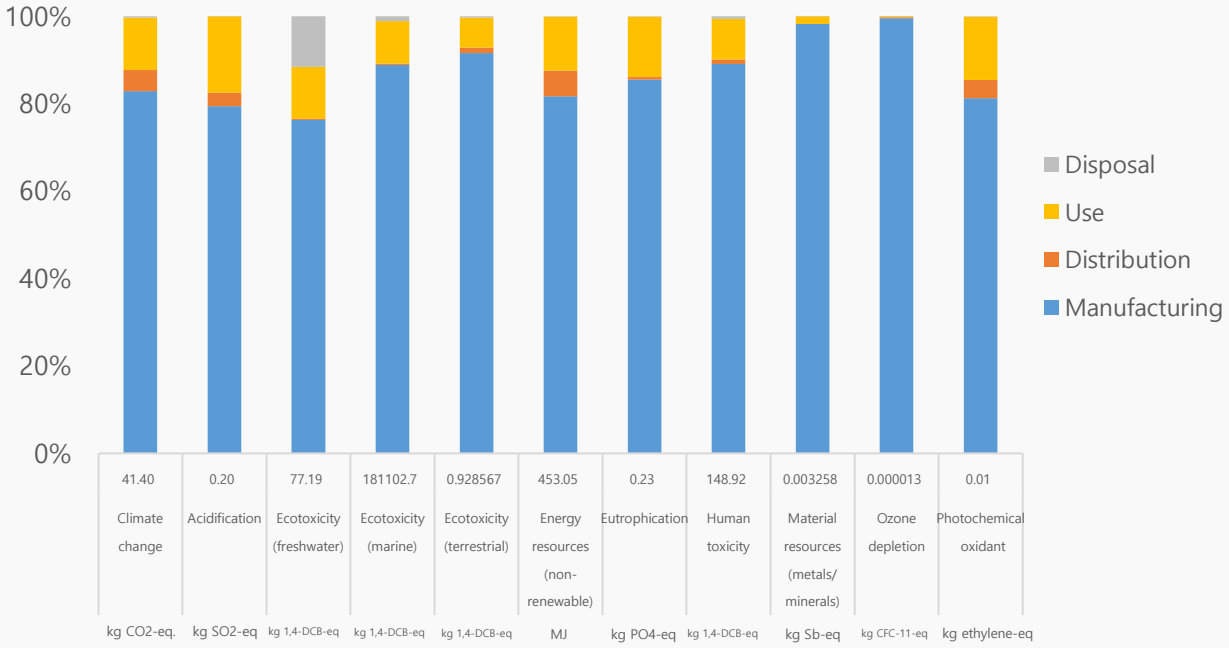
## Product Features

| | | |
|---|---|---|
| Model name | SM-A165F (Galaxy A16) | |
| Dimension (mm) | 164.4 x 77.9 x 7.9 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 216.55 |
| | Packages | 59.01 |

## Global Warming Impact Profile

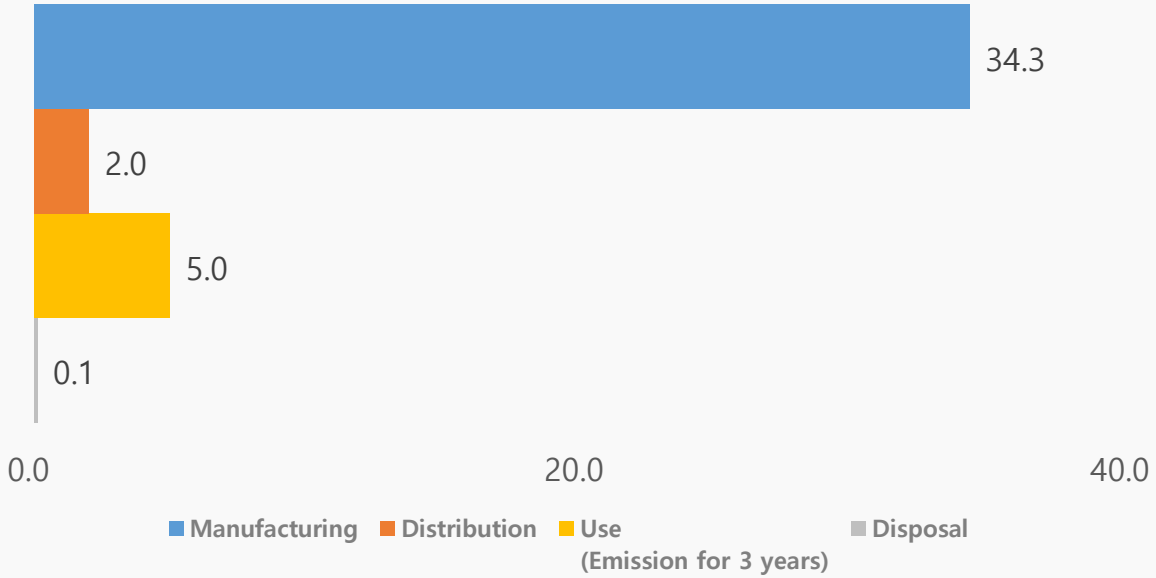



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A16 5G (EU)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

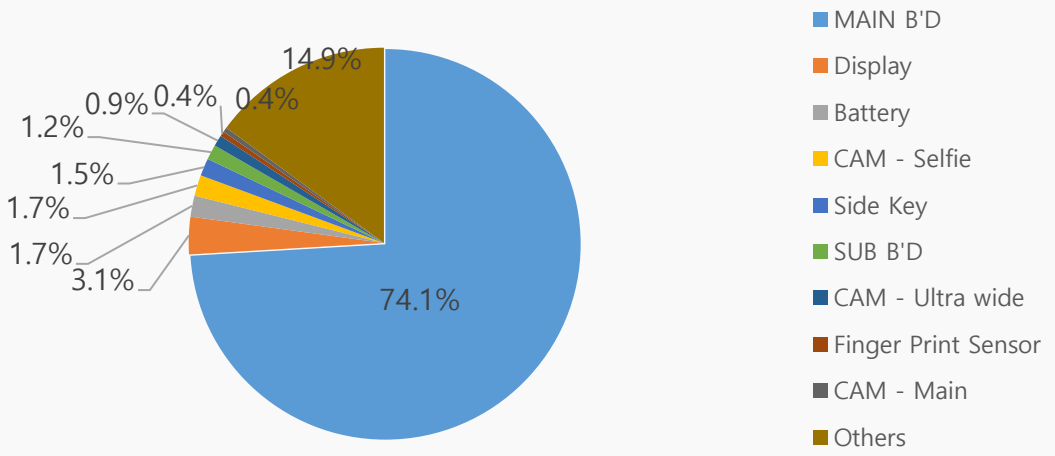
## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

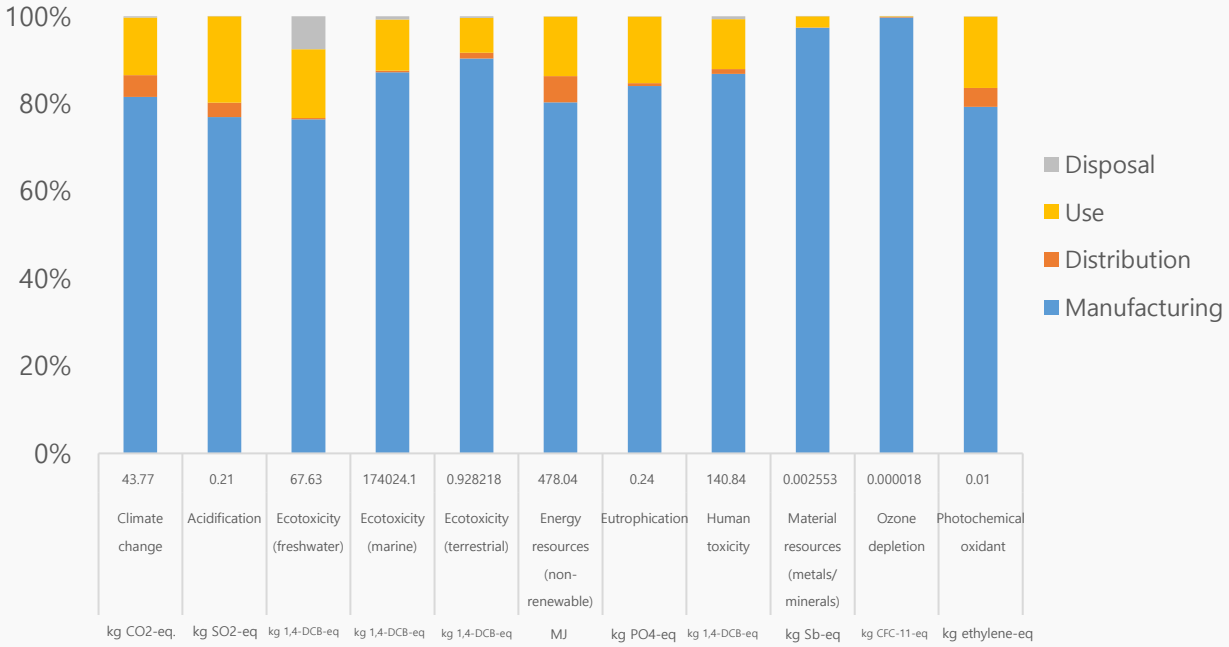
## Product Features

| | | |
|---|---|---|
| Model name | SM-A166B (Galaxy A16 5G) | |
| Dimension (mm) | 164.4 x 77.9 x 7.9 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 223.13 |
| | Packages | 71.52 |

## Global Warming Impact Profile

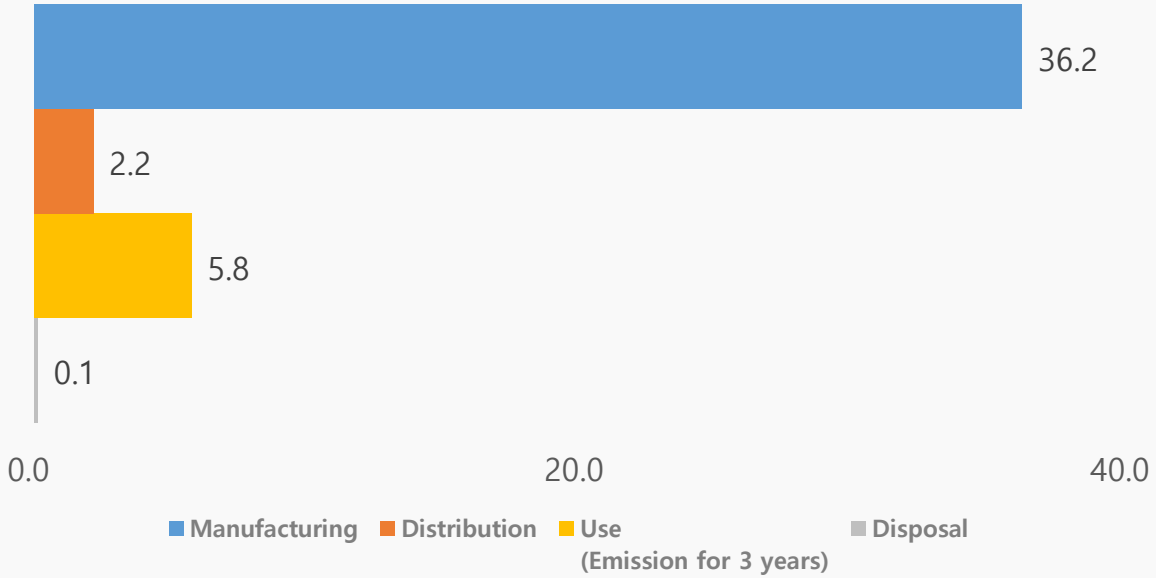



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A16 5G (US)

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040/44 series. Samsung has used SDP(Sustainability Data Platform) to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 11 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML v4.8 (Climate Change:IPCC) |
| **LCA software** | SDP(Sustainability Data Platform) |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

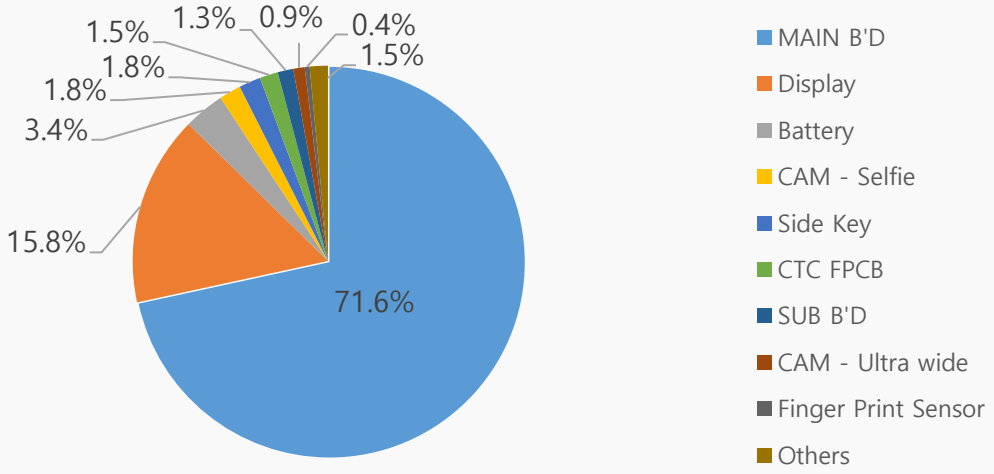
LCA Report Issuance Date : Feb. 03, 2025

Webpage Publication Date of Summary of LCA : Feb. 14, 2025

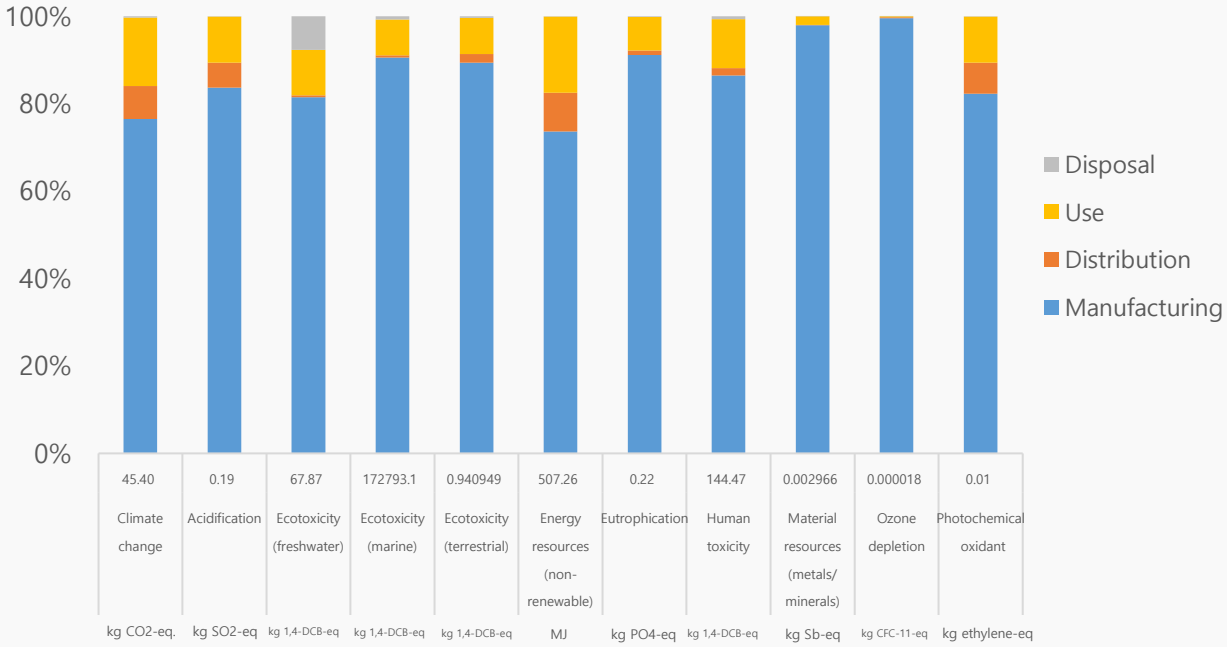
## Product Features

| | | |
|---|---|---|
| Model name | SM-A166U (Galaxy A16 5G) | |
| Dimension (mm) | 164.4 x 77.9 x 7.9 | |
| Display (mm) | 169.1 | |
| Weight (g) | Product & Acc. | 223.13 |
| | Packages | 71.52 |

## Global Warming Impact Profile

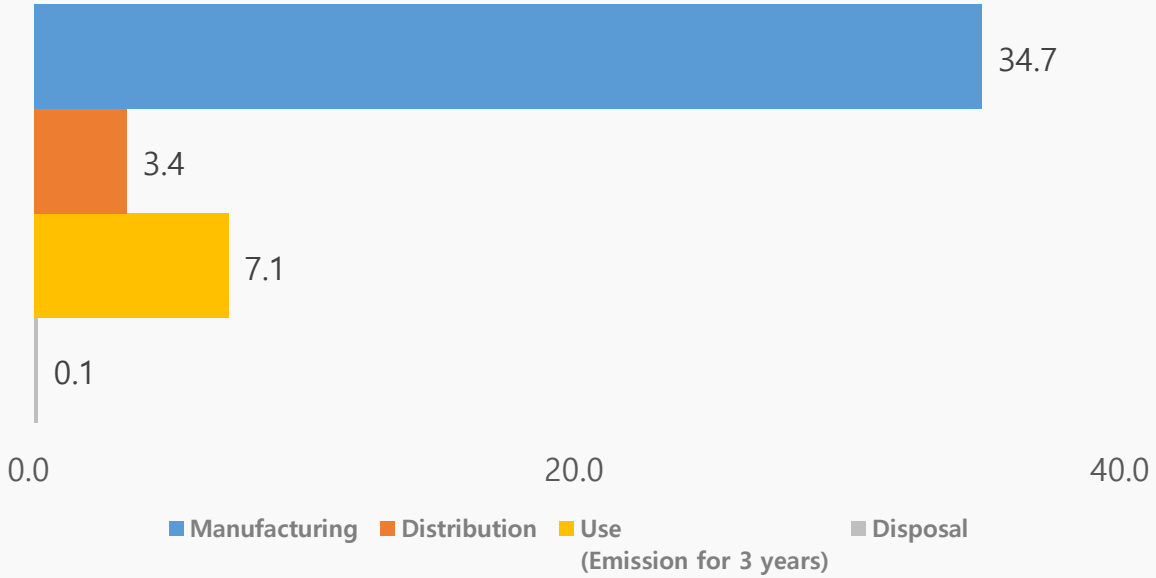



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

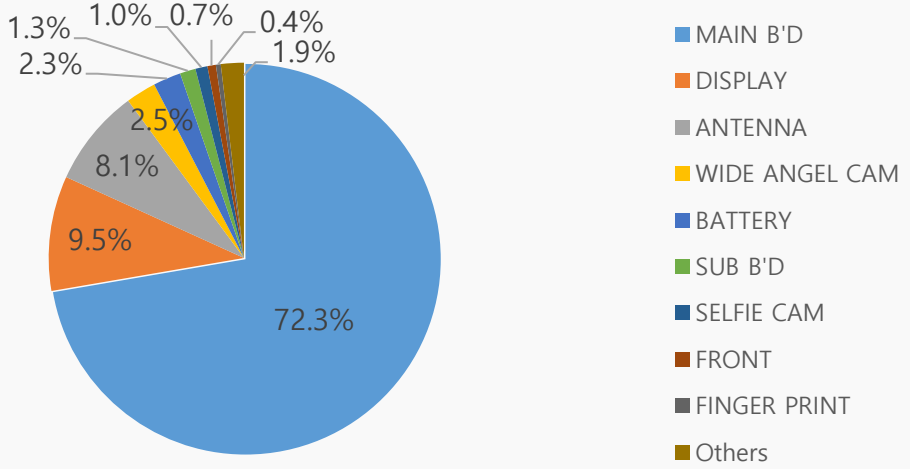
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

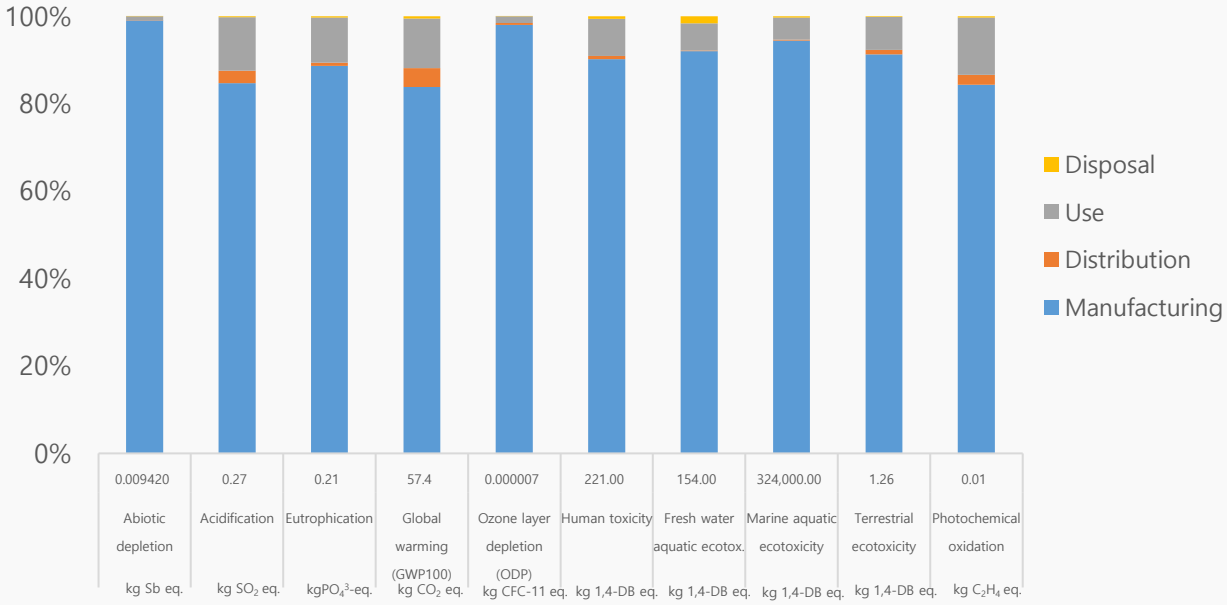
## Product Features

| | |
|---|---|
| Model name | SM-S721B(Galaxy S24 FE) |
| Dimension | 162 x 77.3 x 8.0 mm |
| Display | OLED 6.7" |
| Weight | Product & Acc. : 232.58g<br>Packages : 138.35g |

## Global Warming Impact Profile

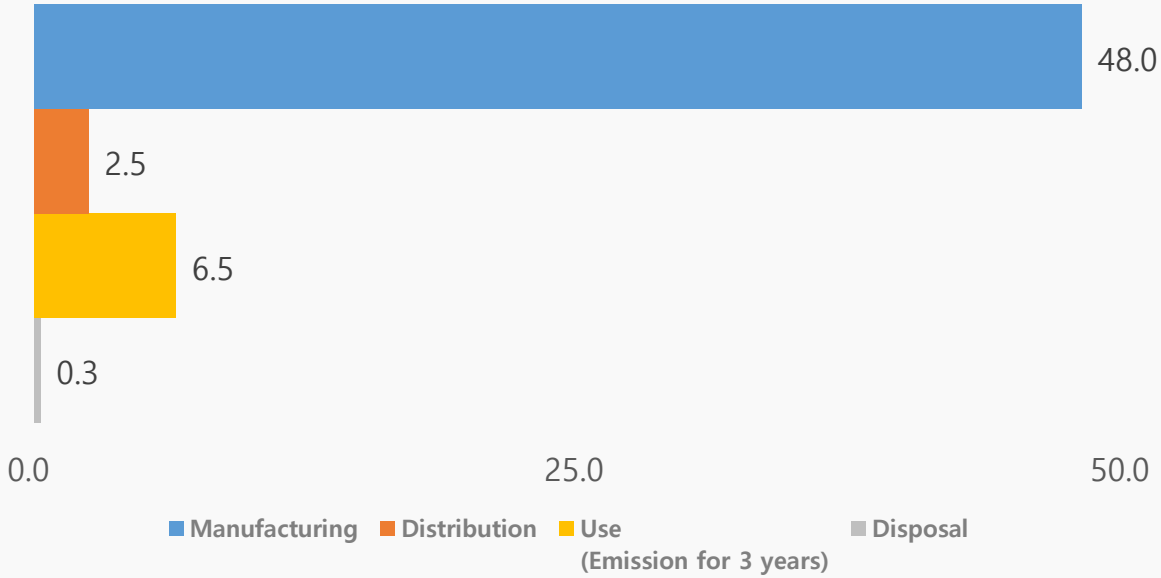



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

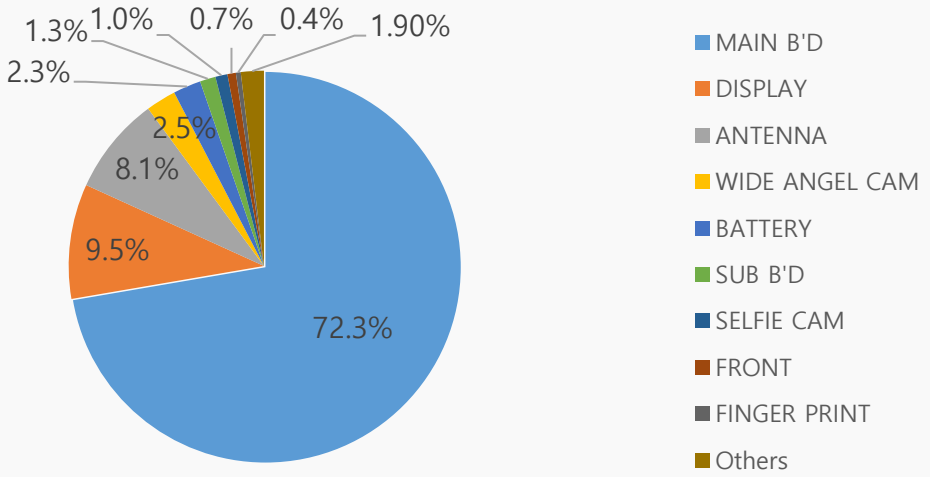
LCA Report Issuance Date : Sep. 11, 2024

Webpage Publication Date of Summary of LCA : Oct. 16, 2024

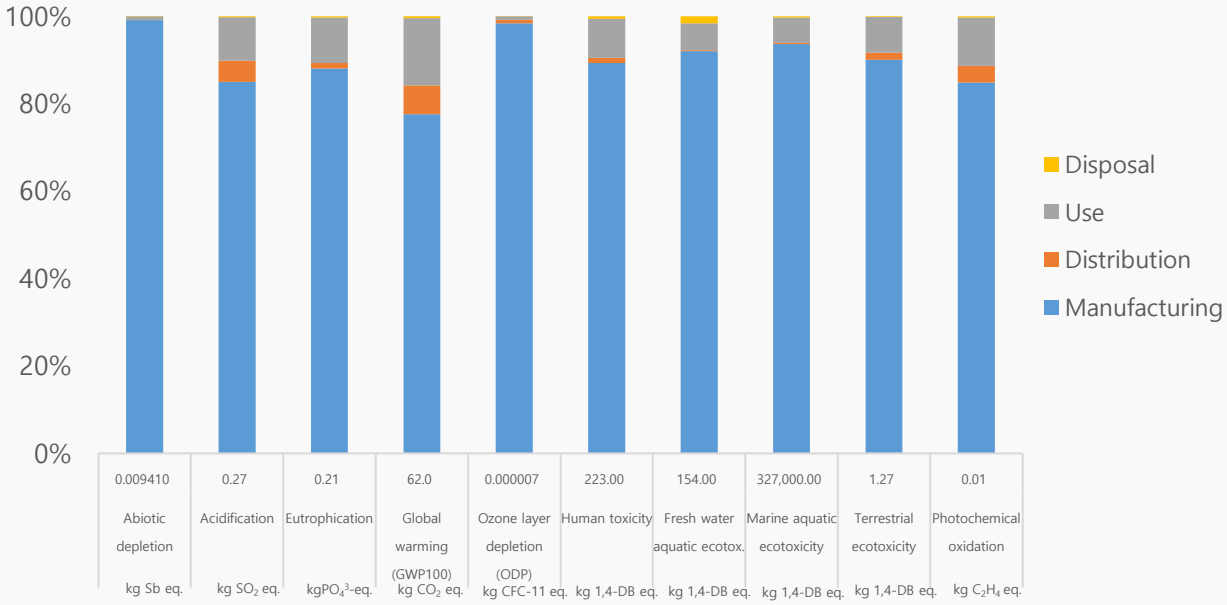
## Product Features

| | |
|---|---|
| **Model name** | SM-S721U(Galaxy S24 FE) |
| **Dimension** | 162 x 77.3 x 8.0 mm |
| **Display** | OLED 6.7" |
| **Weight** | Product & Acc. : 232.58g<br>Packages : 138.35g |

## Global Warming Impact Profile

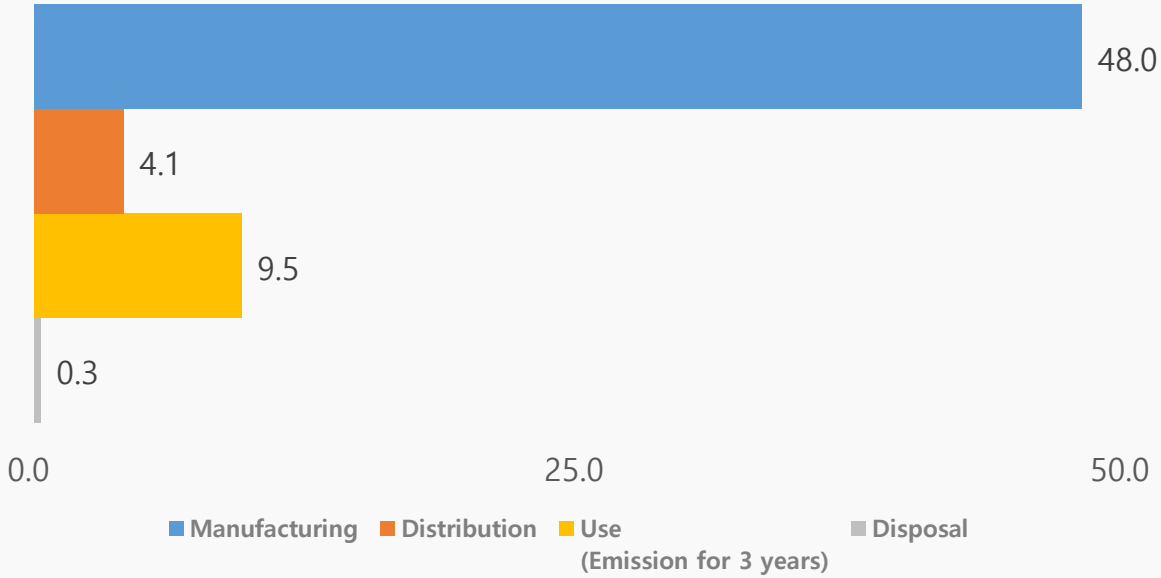



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Flip6

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

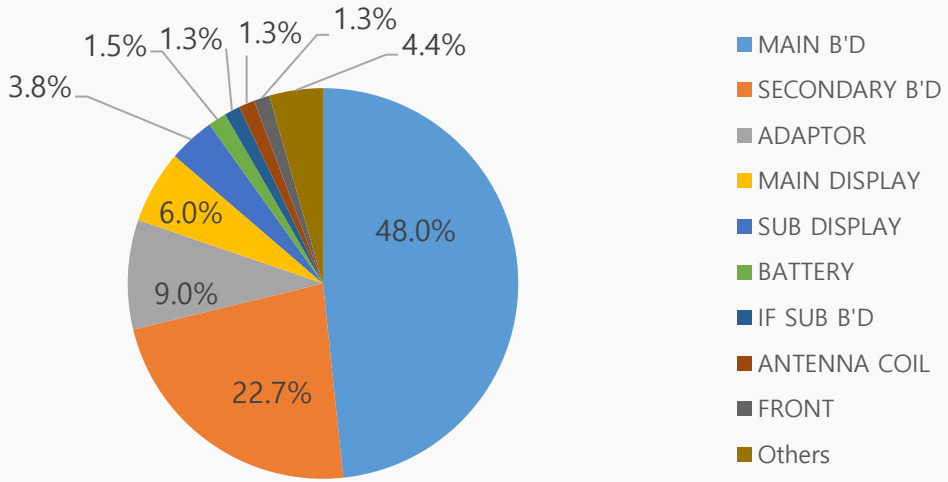
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to China |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Circular Economy Lab of Samsung Electronics. (ecodesign@samsung.com)

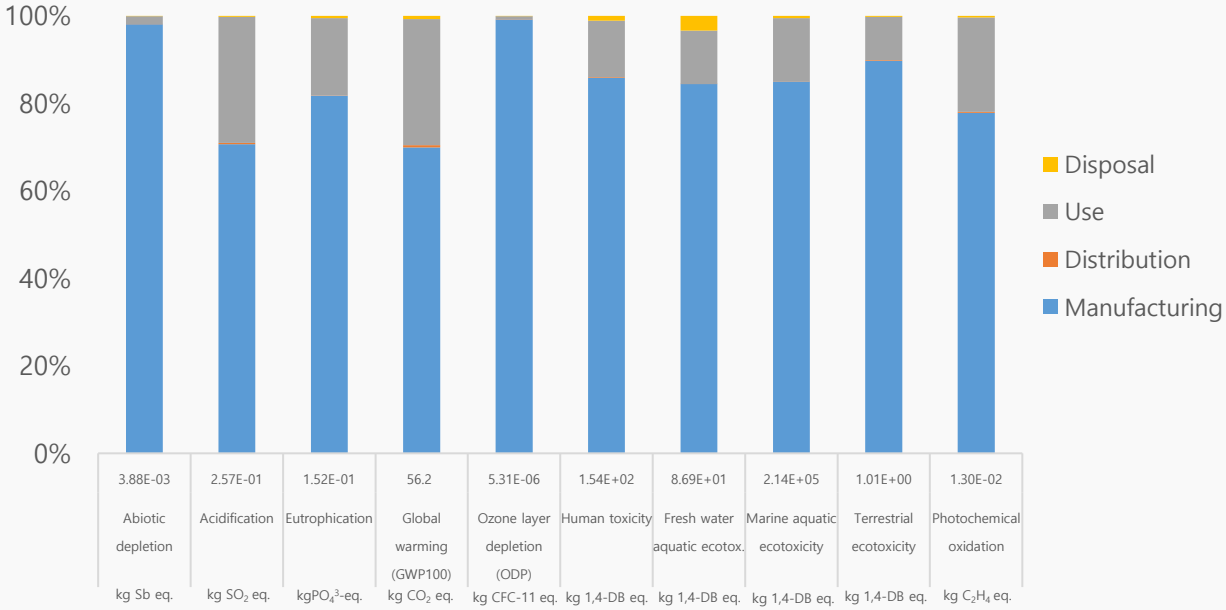
## Product Features

| | |
|---|---|
| **Model name** | SM-F7410(Galaxy Z Flip6) |
| **Dimension** | 165.1 x 71.9 x 6.9 mm |
| **Display** | OLED 6.7” / 3.4” |
| **Weight** | Product&Acc. : 263.63 g<br>Packages : 177.80 g |

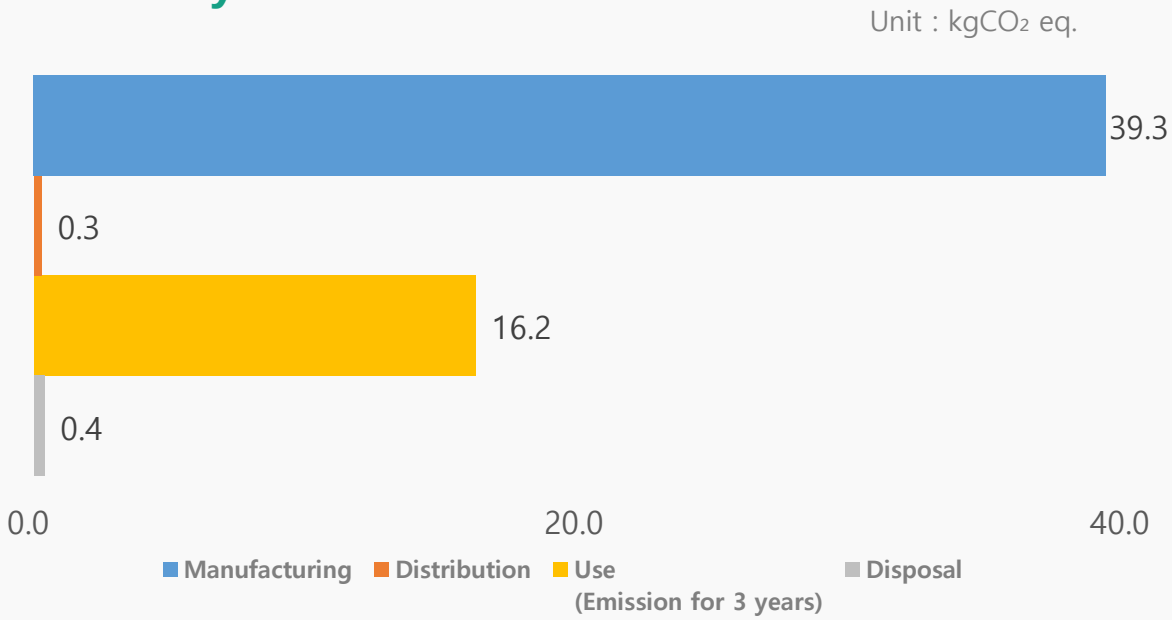
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Fold6

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

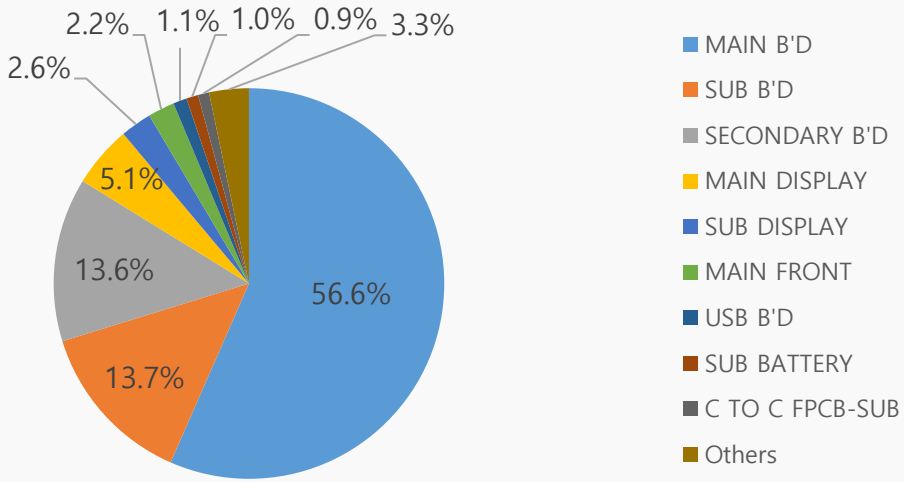
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Circular Economy Lab of Samsung Electronics. (ecodesign@samsung.com)

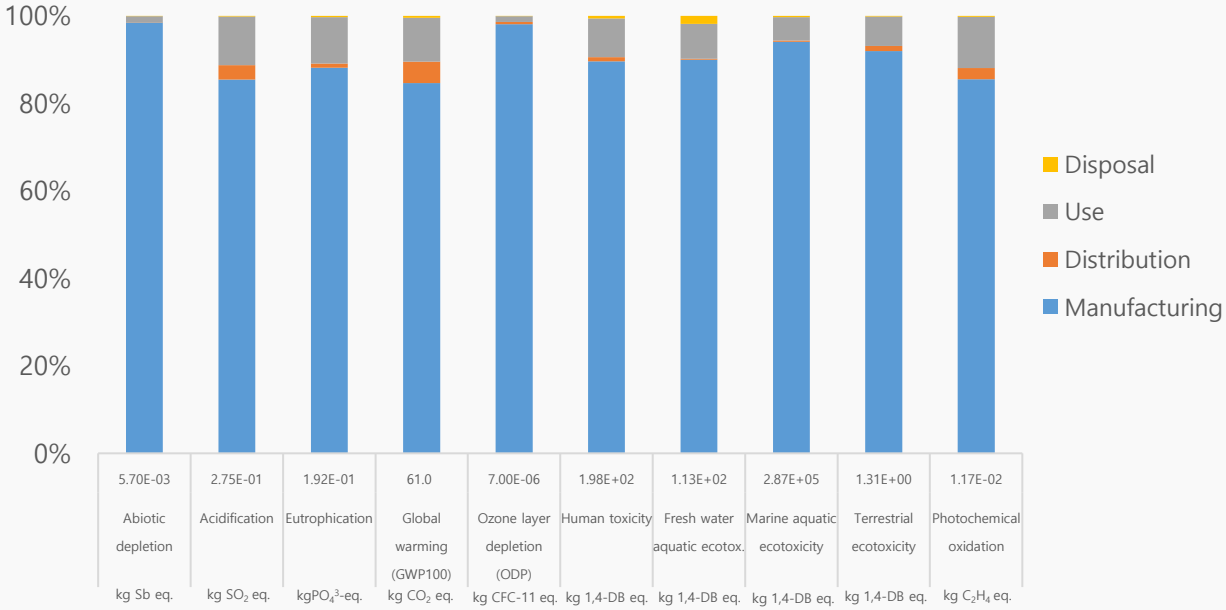
## Product Features

| | |
|---|---|
| Model name | SM-F956B(Galaxy Z Fold6) |
| Dimension | 153.5 x 132.6 x 5.6 mm |
| Display | OLED 7.6” / 6.3” |
| Weight | Product&Acc. : 259.33 g<br>Packages : 193.46 g |

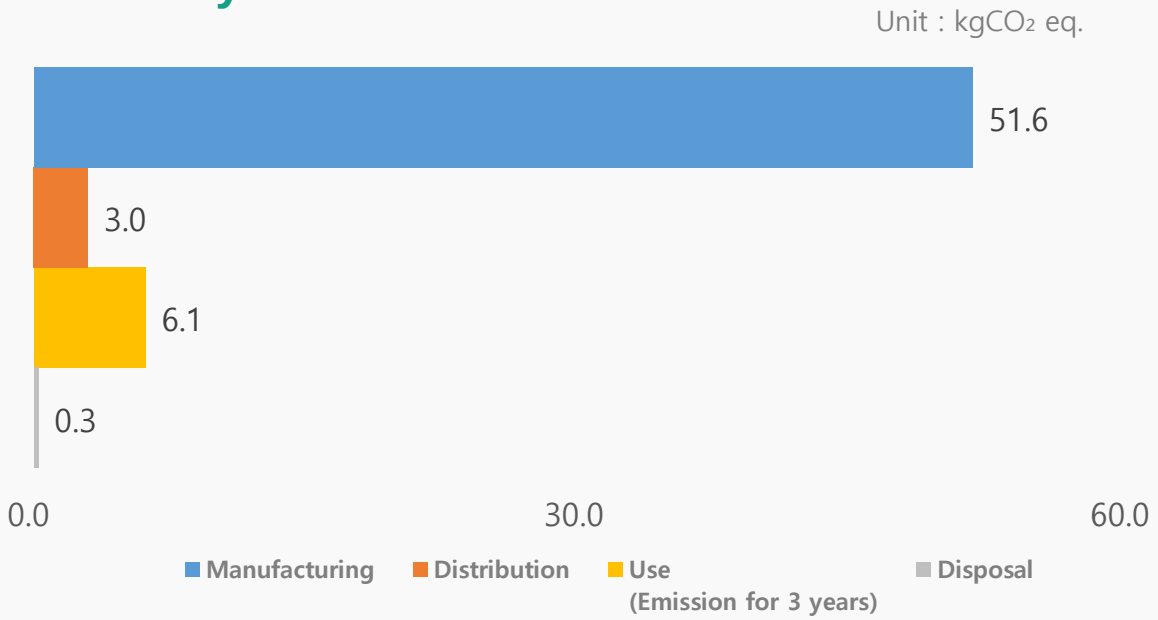
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Fold6

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and Korea to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Circular Economy Lab of Samsung Electronics. (ecodesign@samsung.com)

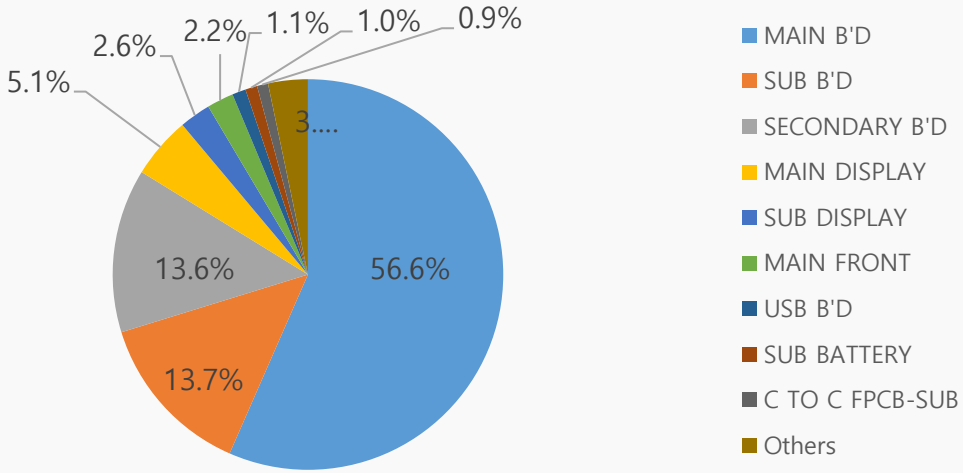
LCA Report Issuance Date : Aug. 9, 2024

Webpage Publication Date of Summary of LCA : Aug. 30, 2024

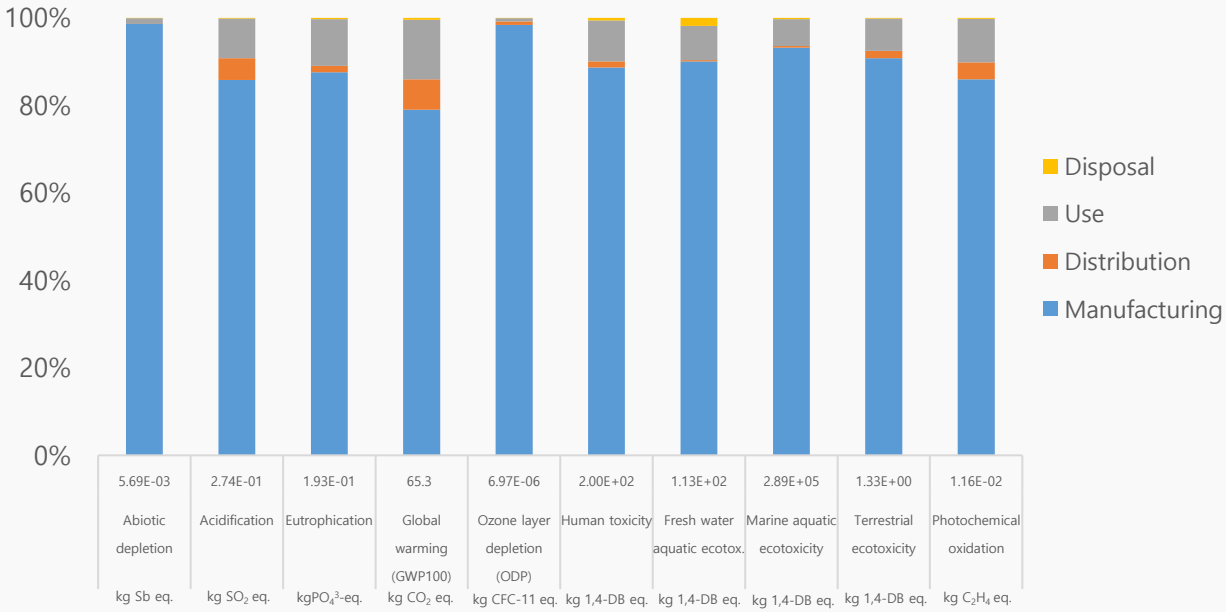
## Product Features

| | |
|---|---|
| Model name | SM-F956U(Galaxy Z Fold6) |
| Dimension | 153.5 x 132.6 x 5.6 mm |
| Display | OLED 7.6”” / 6.3”” |
| Weight | Product&Acc. : 259.33 g<br>Packages : 193.46 g |

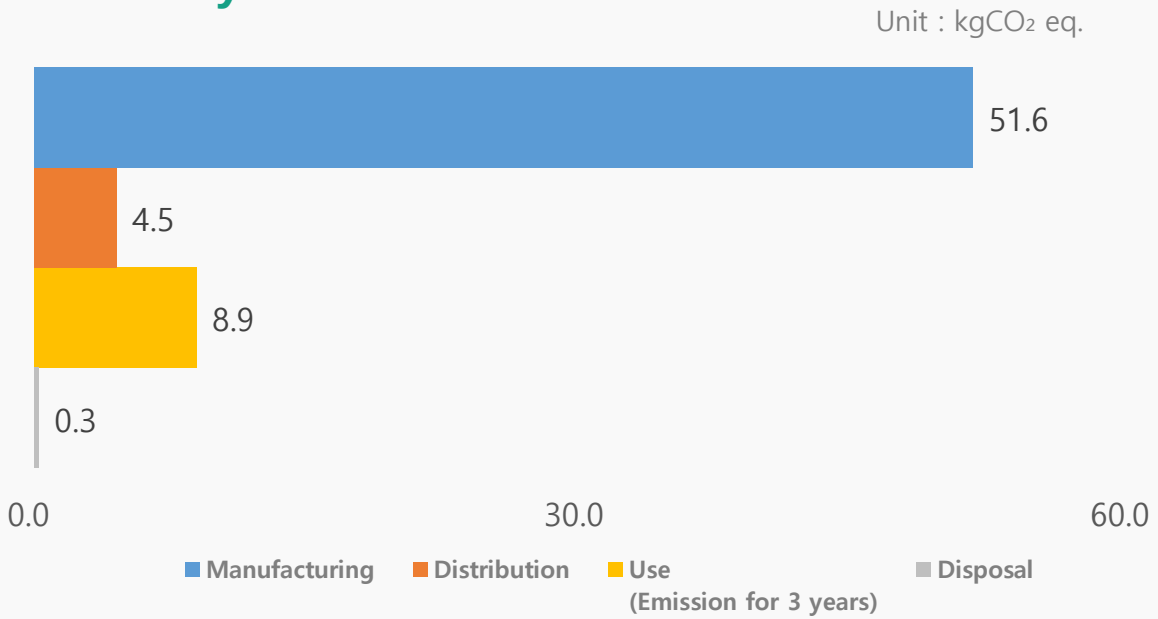
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Flip6

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

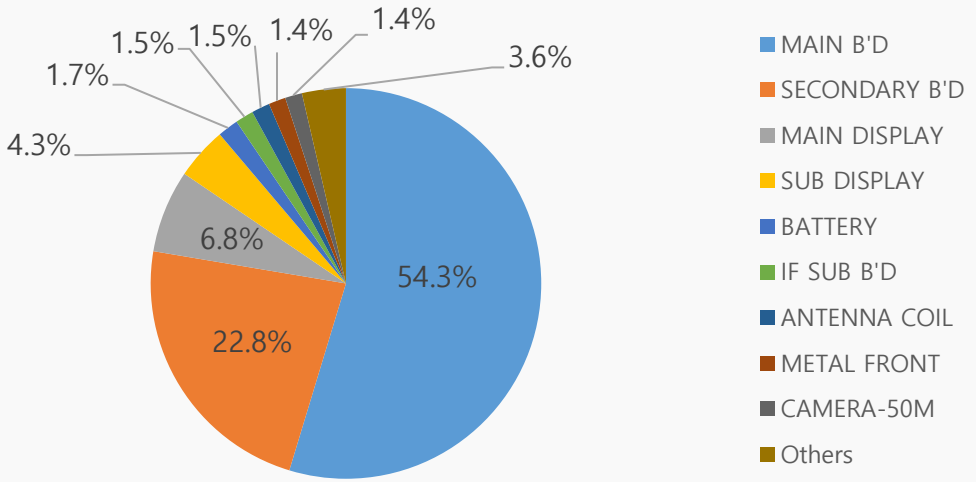
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Circular Economy Lab of Samsung Electronics. (ecodesign@samsung.com)

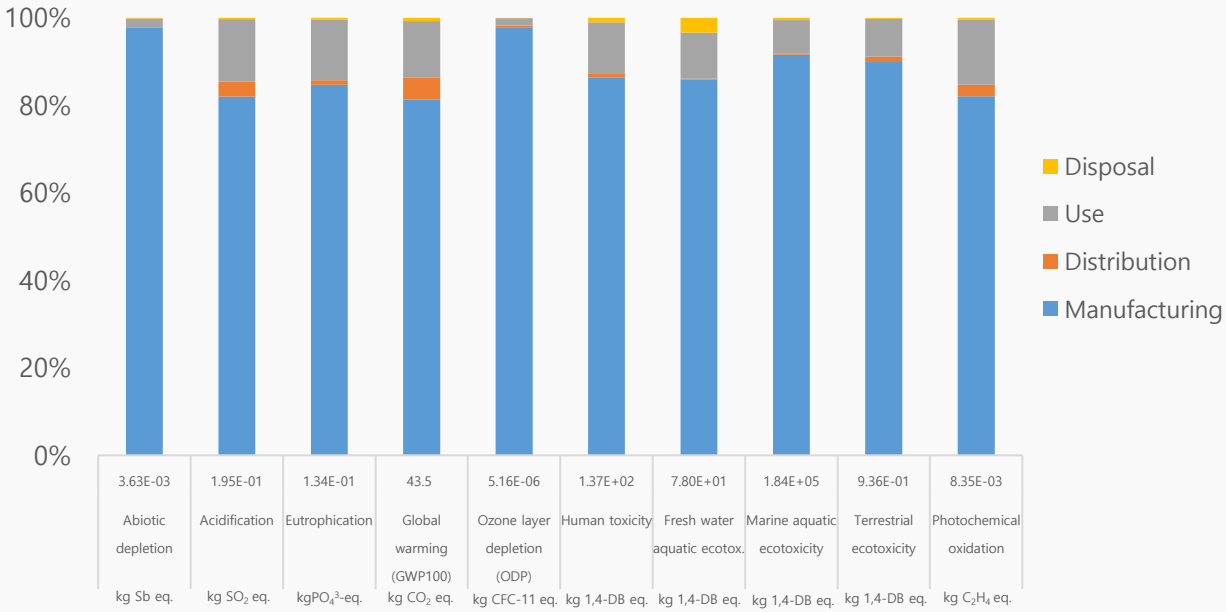
## Product Features

| | |
|---|---|
| **Model name** | SM-F741B(Galaxy Z Flip6) |
| **Dimension** | 165.1 x 71.9 x 6.9 mm |
| **Display** | OLED 6.7” / 3.4” |
| **Weight** | Product&Acc. : 208.54 g<br>Packages : 130.45 g |

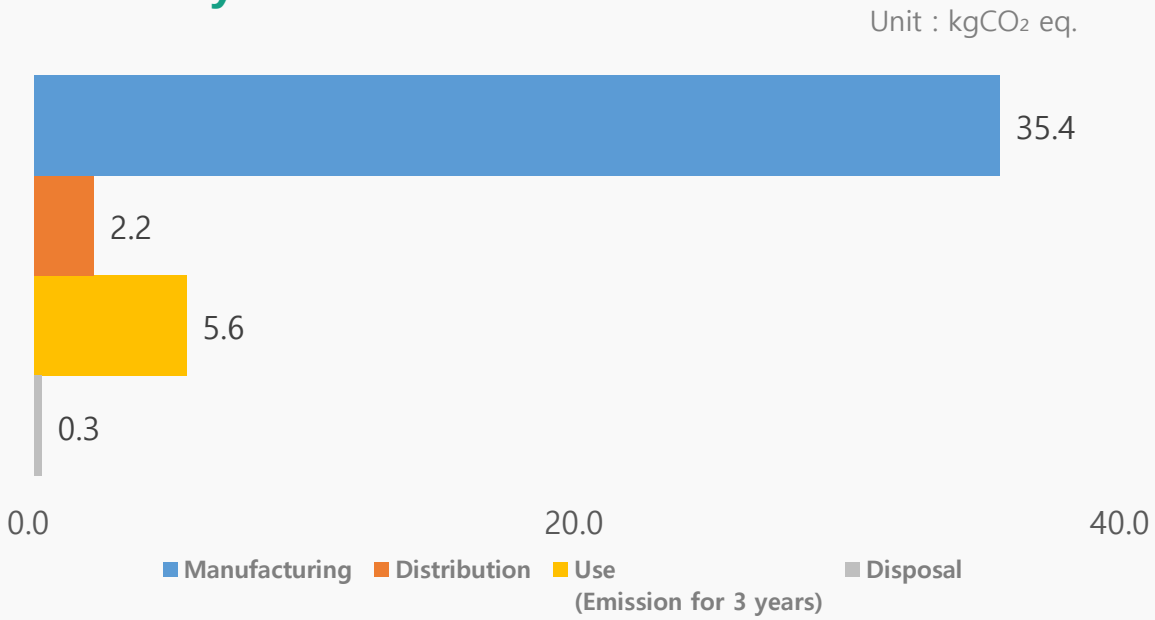
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Flip6

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and Korea to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Circular Economy Lab of Samsung Electronics. (ecodesign@samsung.com)

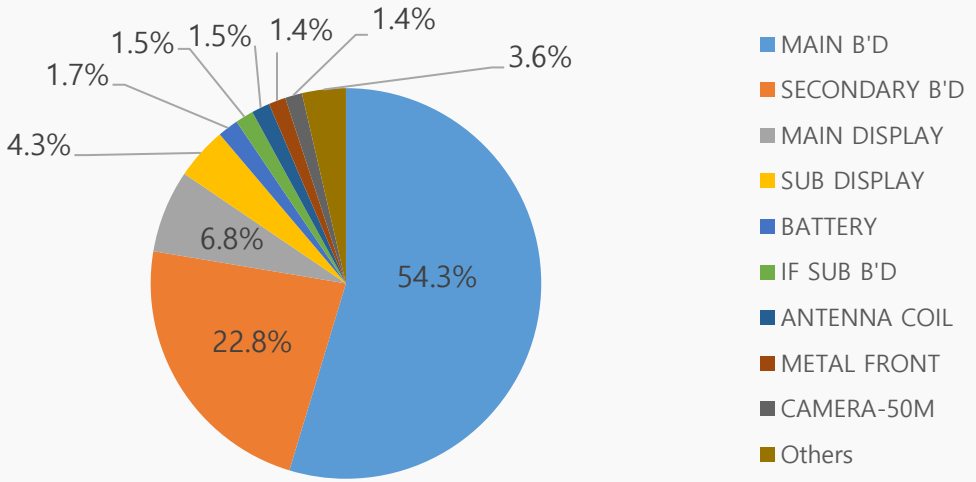
LCA Report Issuance Date : Aug. 2, 2024

Webpage Publication Date of Summary of LCA : Aug. 30, 2024

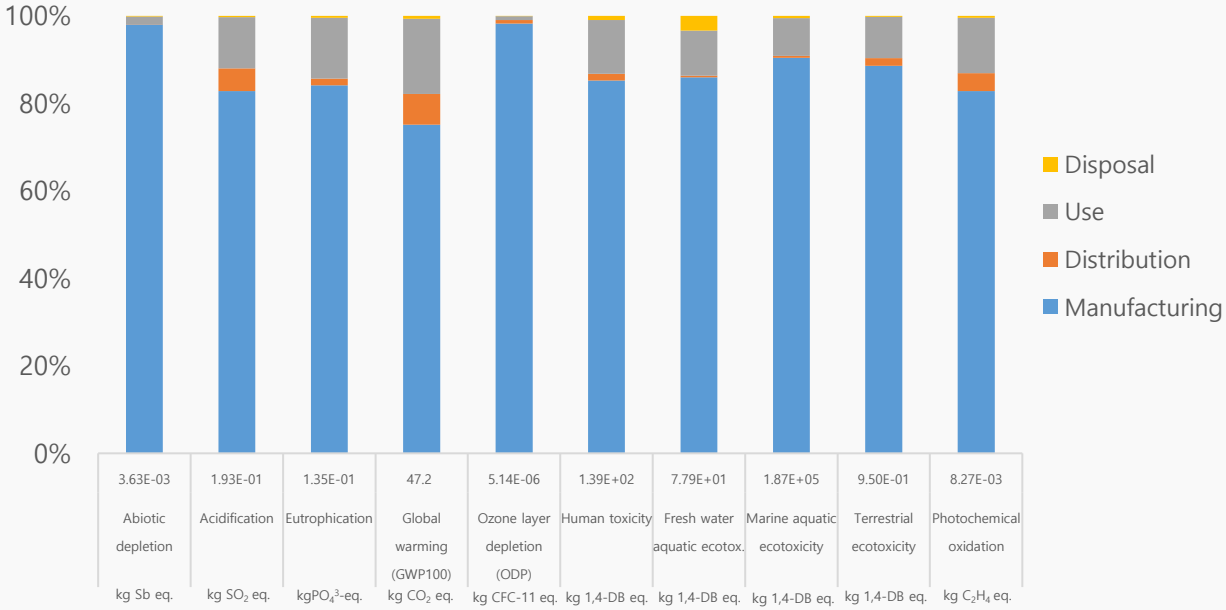
## Product Features

| | |
|---|---|
| **Model name** | SM-F741U(Galaxy Z Flip6) |
| **Dimension** | 165.1 x 71.9 x 6.9 mm |
| **Display** | OLED 6.7” / 3.4” |
| **Weight** | Product&Acc. : 208.54 g<br>Packages : 130.45 g |

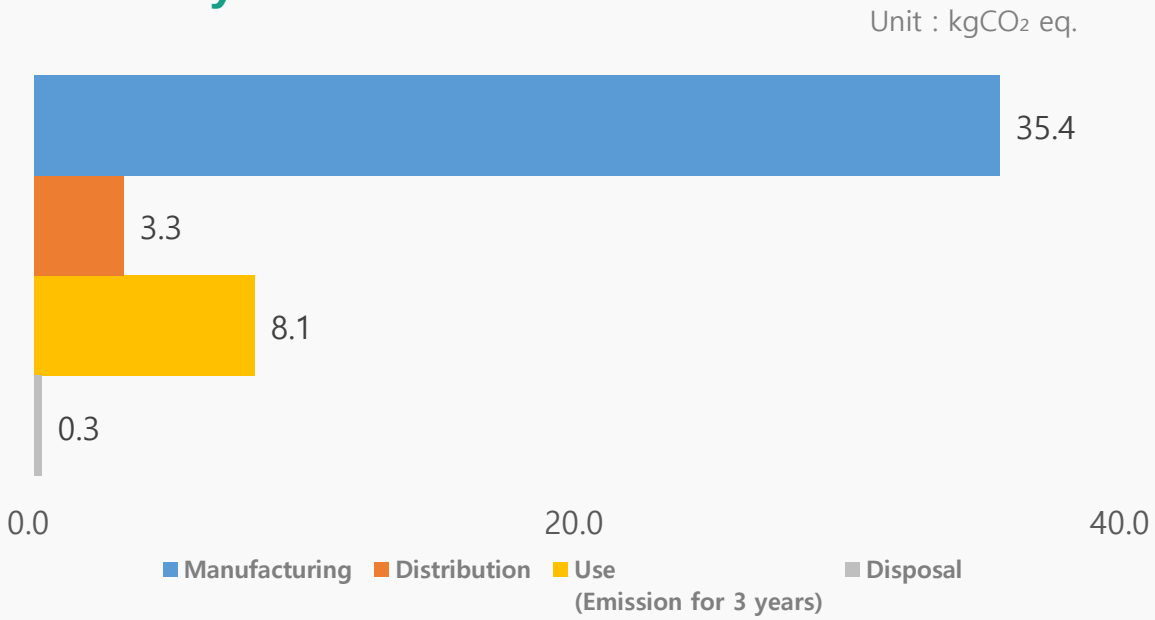
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M35 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

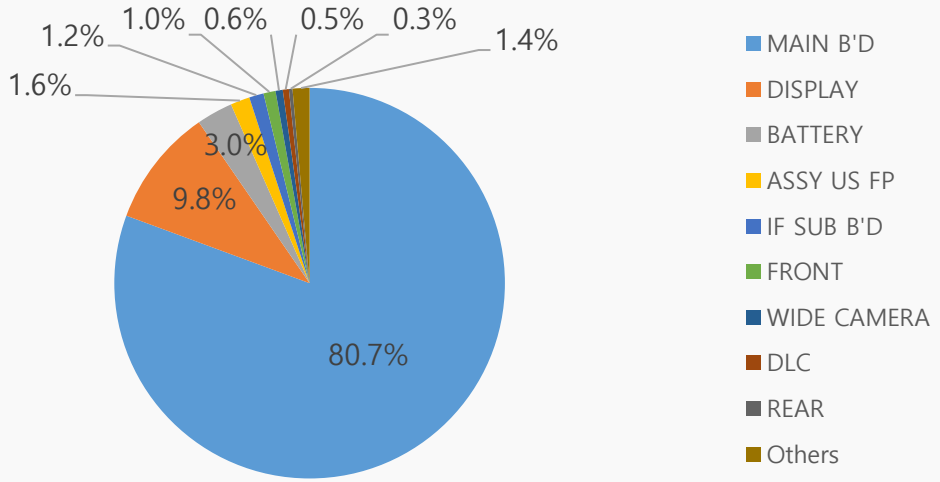
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From India to India |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

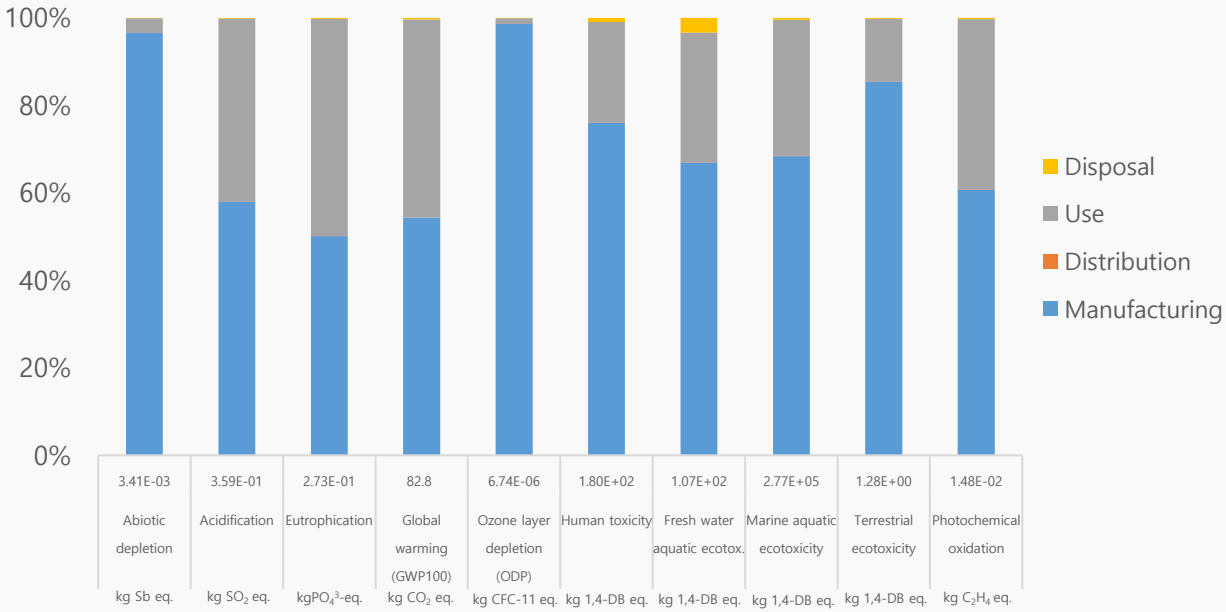
## Product Features

| | |
|---|---|
| Model name | SM-M356B(Galaxy M35 5G) |
| Dimension | 162.3 x 78.6 x 9.1 mm |
| Display | OLED 6.6” |
| Weight | Product&Acc. : 243.16 g<br>Packages : 99.57 g |

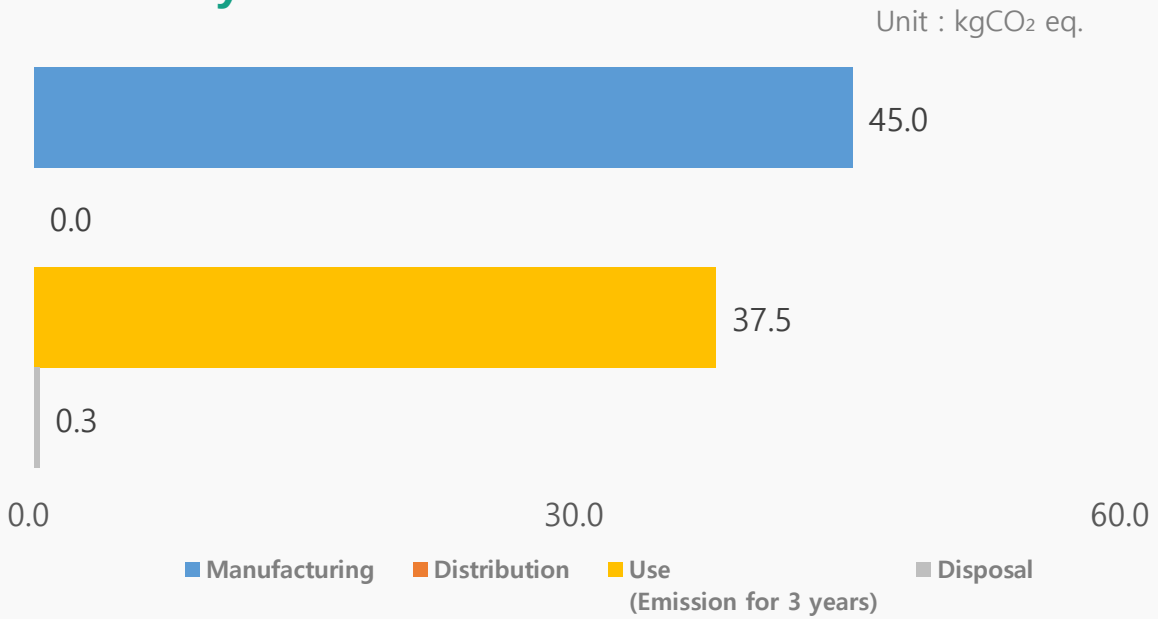
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A35 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

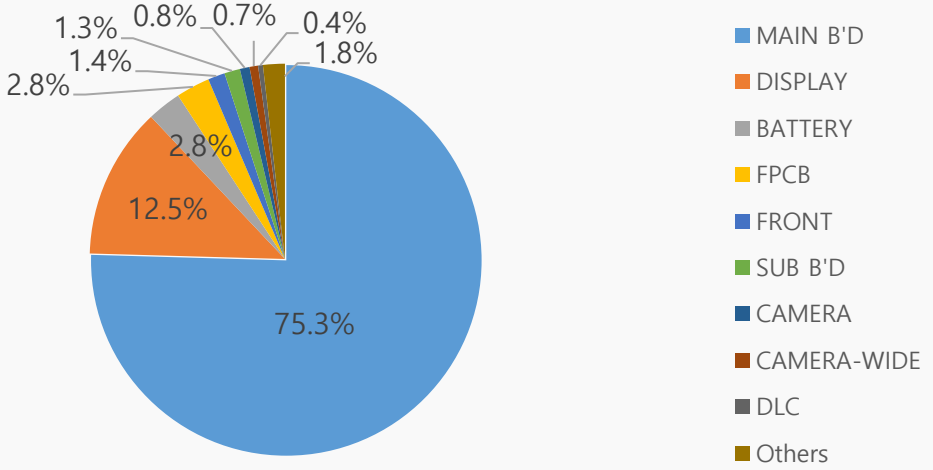
LCA Report Issuance Date : Jun. 25, 2024

Webpage Publication Date of Summary of LCA : Jun. 25, 2024

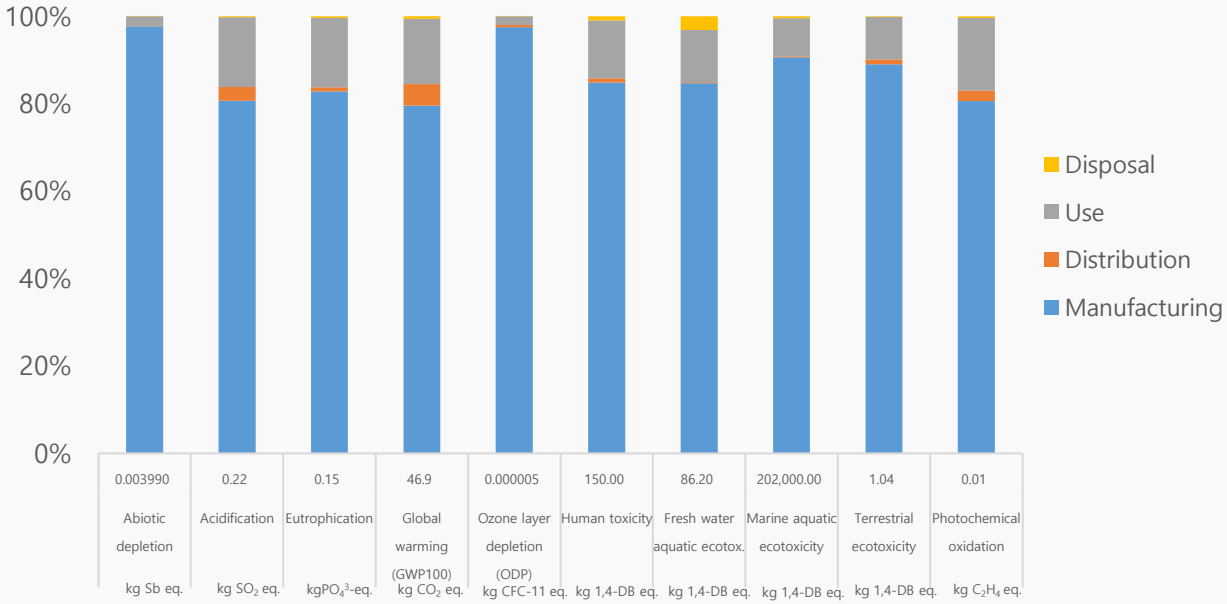
## Product Features

| | |
|---|---|
| Model name | SM-A356B(Galaxy A35 5G) |
| Dimension | 161.1 x 78.0 x 8.2 mm |
| Display | LCD 6.6" |
| Weight | Product & Acc. : 231.62g<br>Packages : 114.83g |

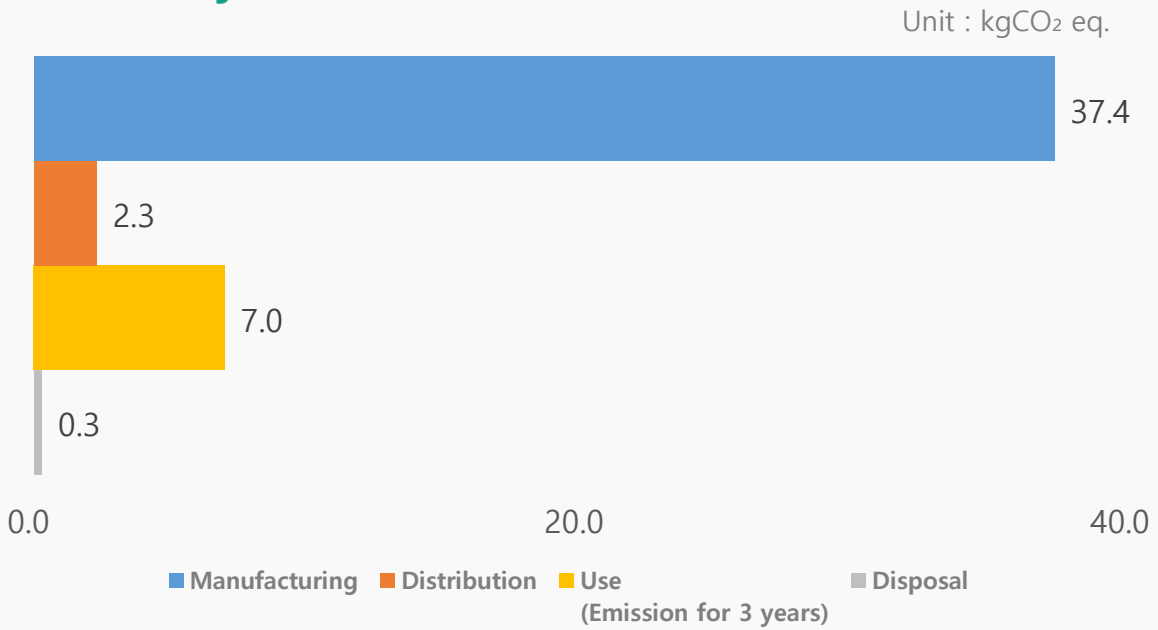
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A55 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.6.0.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.10 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.6.0.1 LCA tool |
| **LCA software** | SimaPro 9.6.0.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

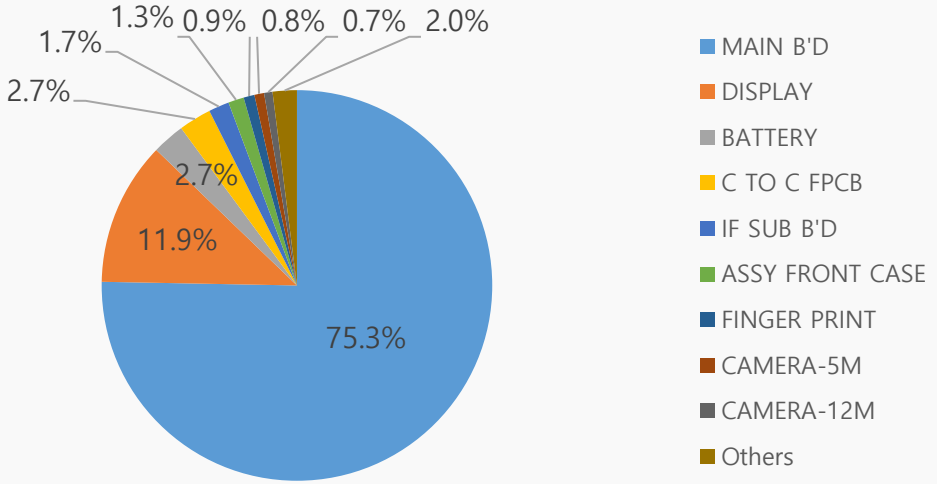
LCA Report Issuance Date : May. 31, 2024

Webpage Publication Date of Summary of LCA : Jun. 25, 2024

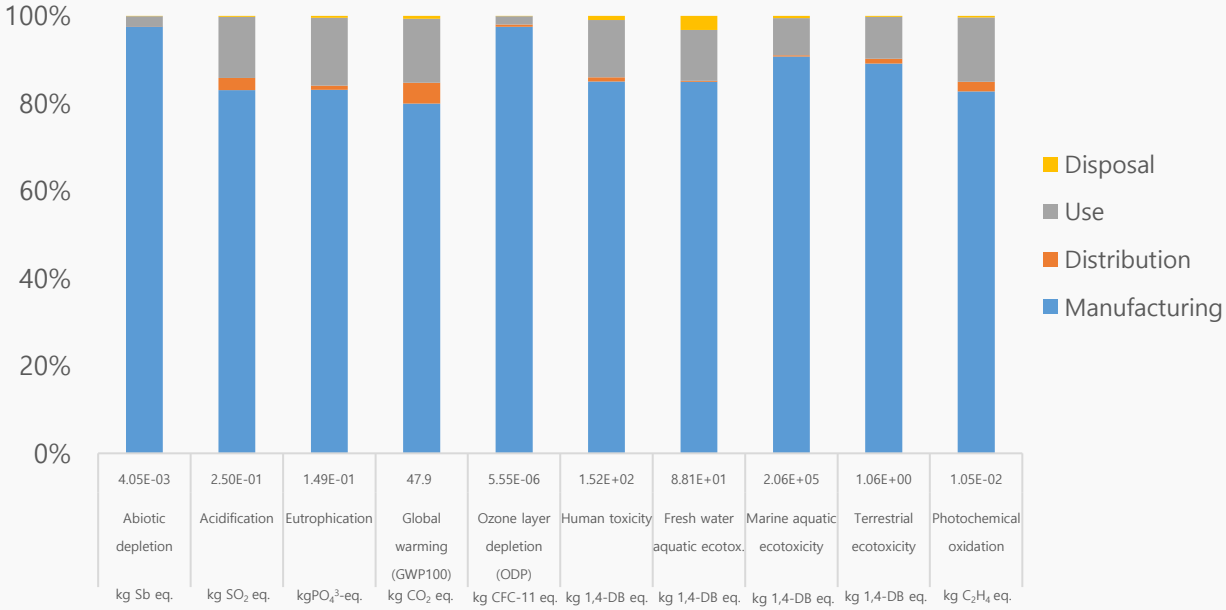
## Product Features

| | |
|---|---|
| **Model name** | SM-A556B(Galaxy A55 5G) |
| **Dimension** | 161.1 x 77.4 x 8.2 mm |
| **Display** | LCD 6.6” |
| **Weight** | Product&Acc. : 235.93 g<br>Packages : 119.29 g |

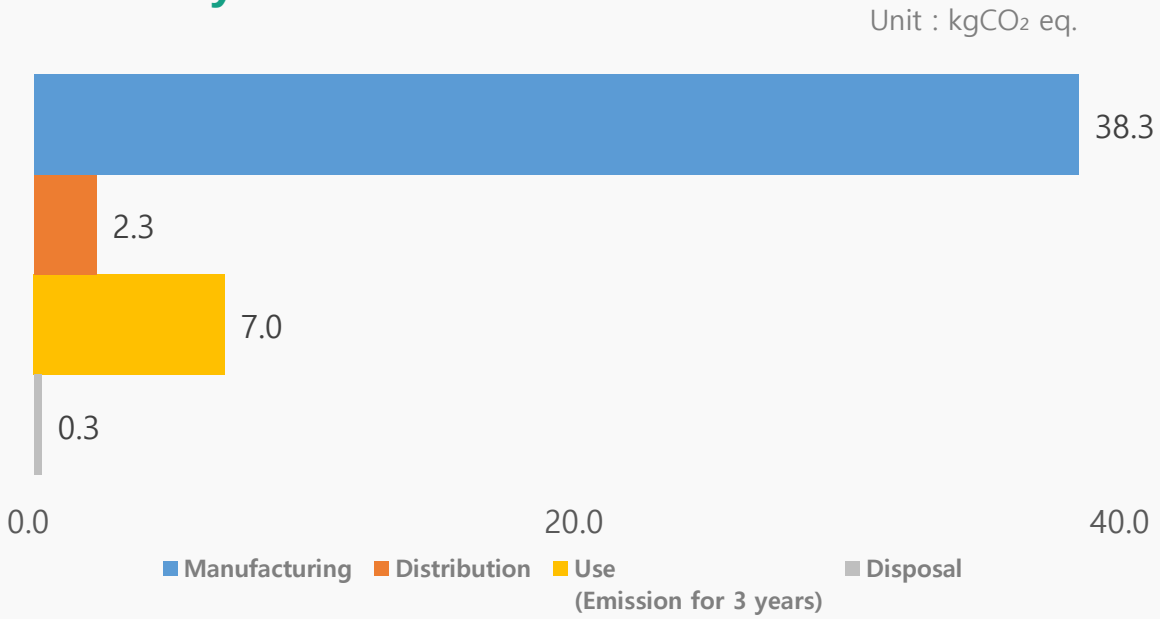
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M15 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

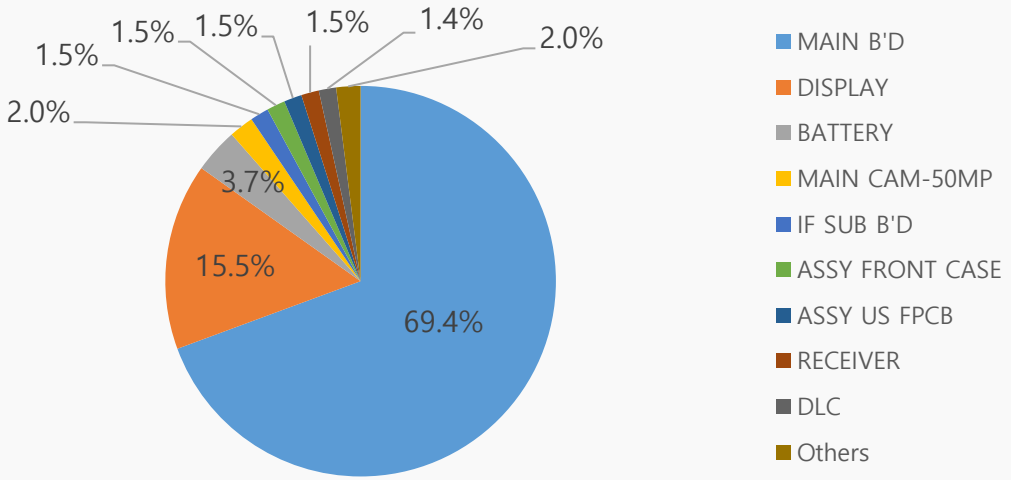
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and India to Turkiye |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

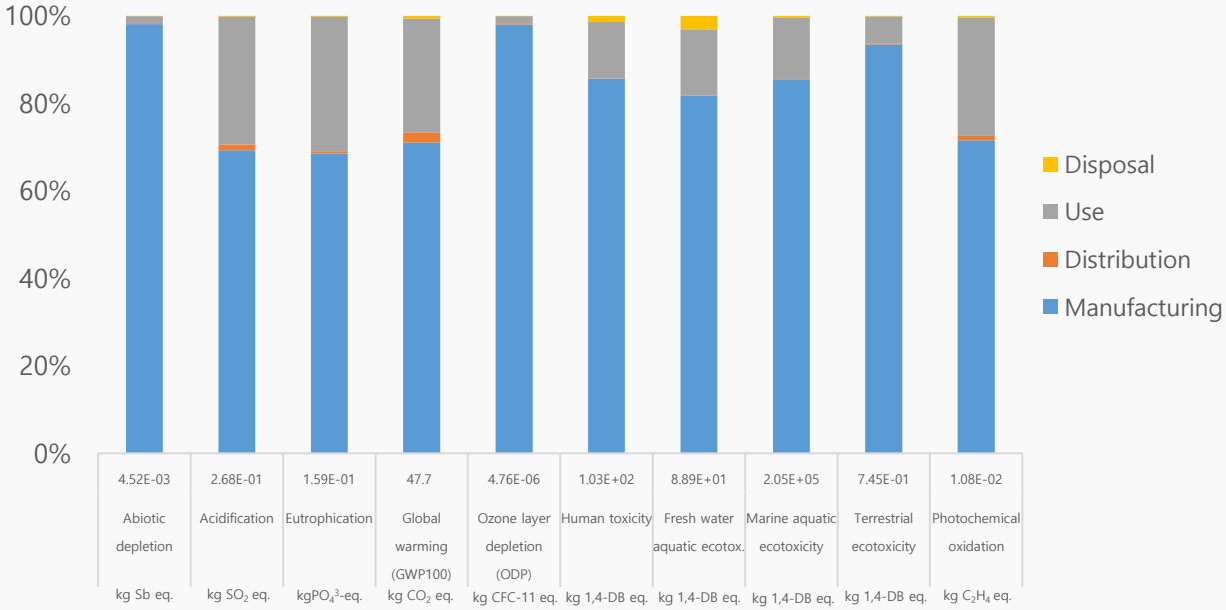
## Product Features

| | |
|---|---|
| Model name | SM-M156B(Galaxy M15 5G) |
| Dimension | 160.1 x 76.8 x 9.3mm |
| Display | OLED 6.5” |
| Weight | Product&Acc. : 236.88 g<br>Packages : 89.77 g |

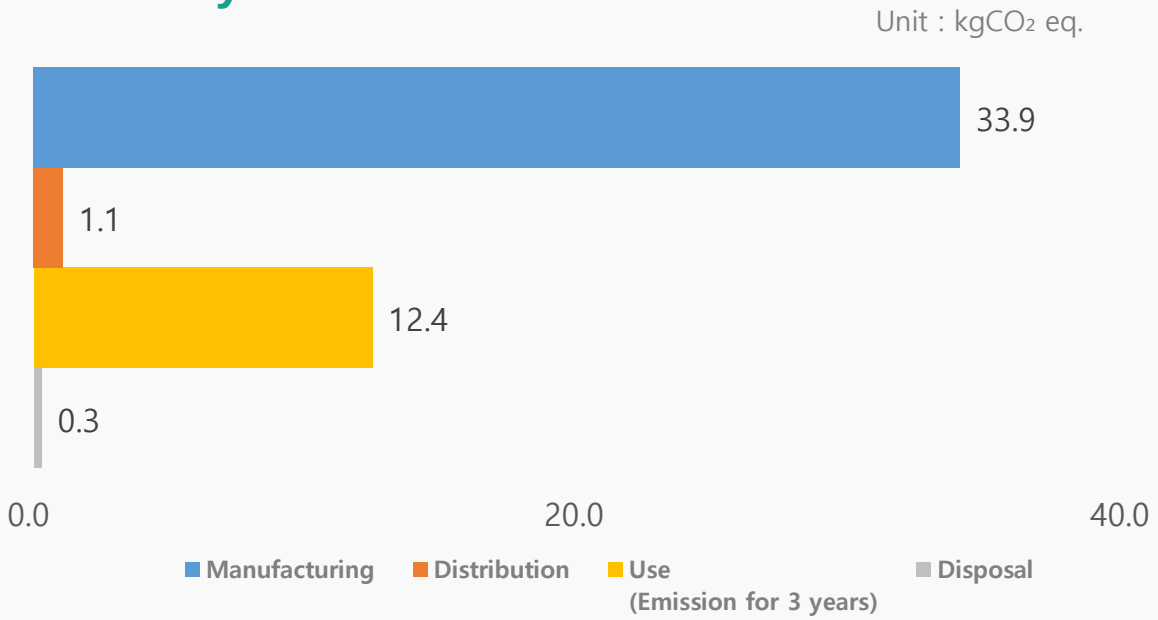
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy XCover7

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

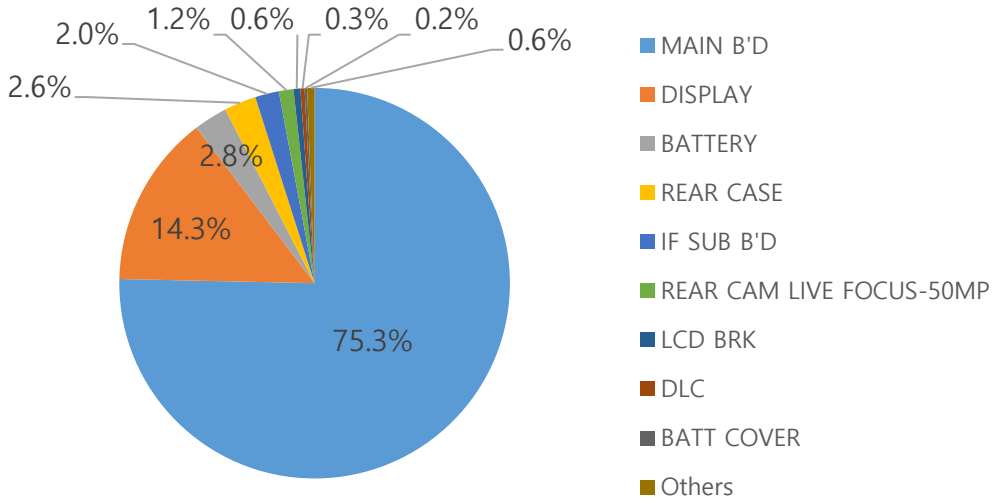
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

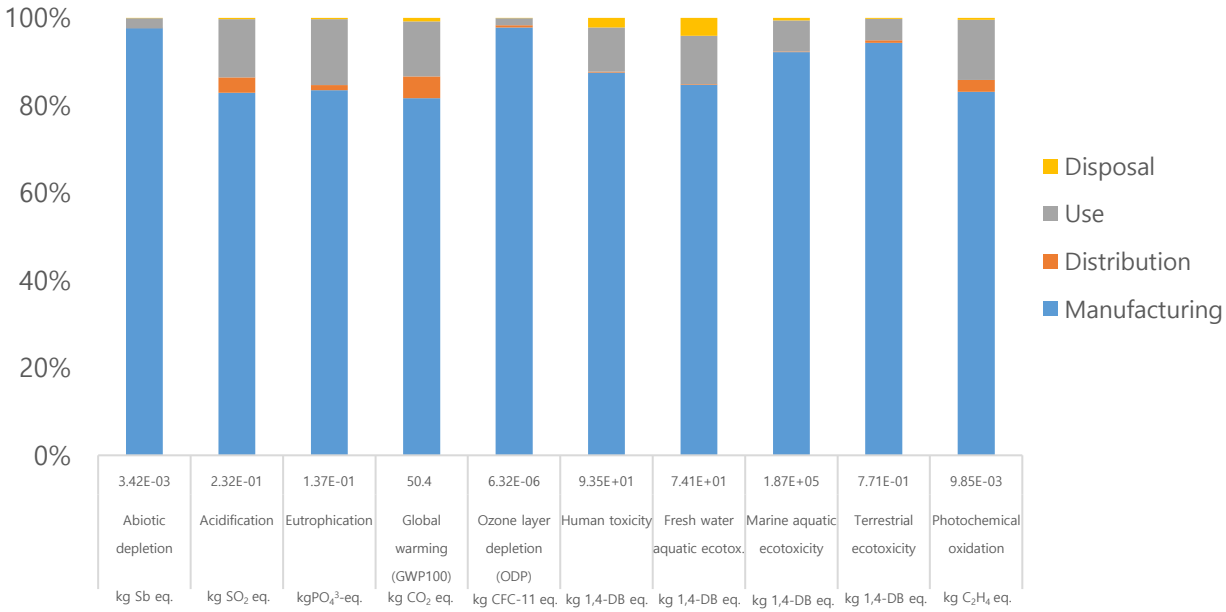
## Product Features

| | |
|---|---|
| **Model name** | SM-G556B(Galaxy XCover7) |
| **Dimension** | 169.0 x 80.1 x 10.2 mm |
| **Display** | LCD 6.6” |
| **Weight** | Product&Acc. : 261.75 g<br>Packages : 114.76 g |

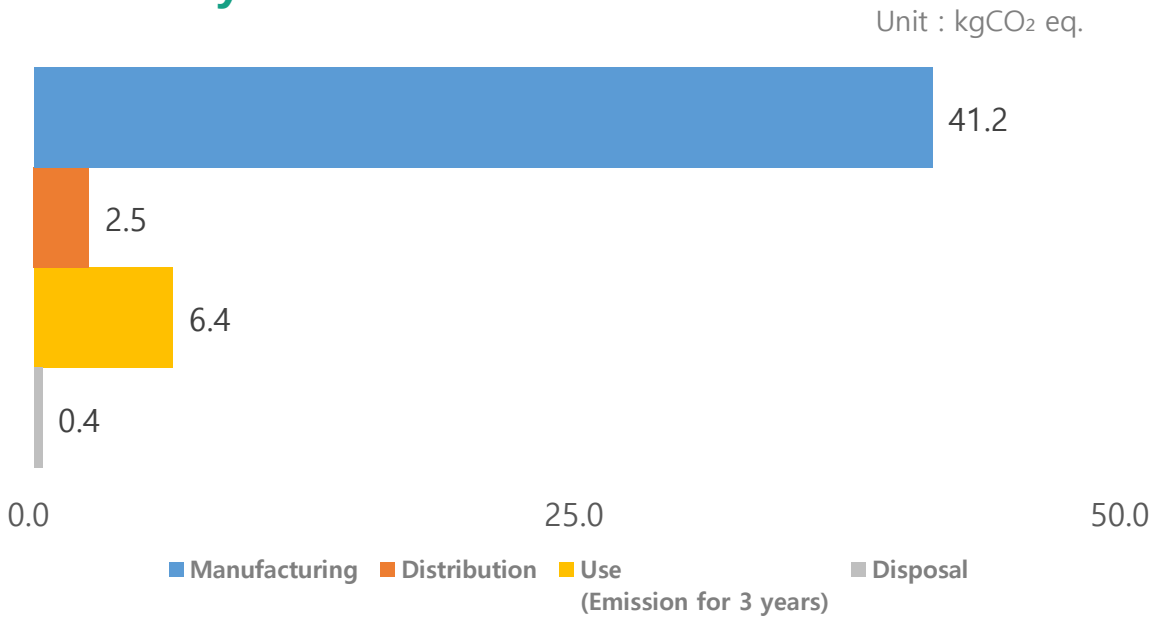
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

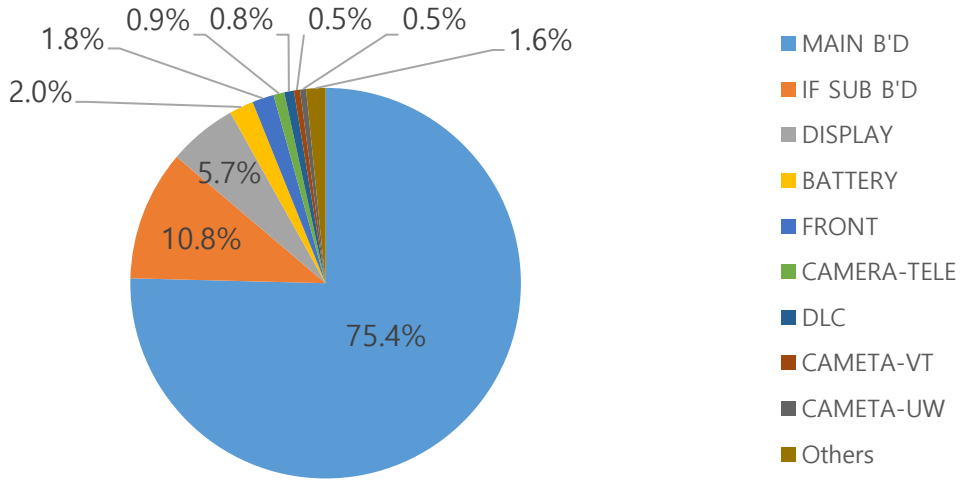
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

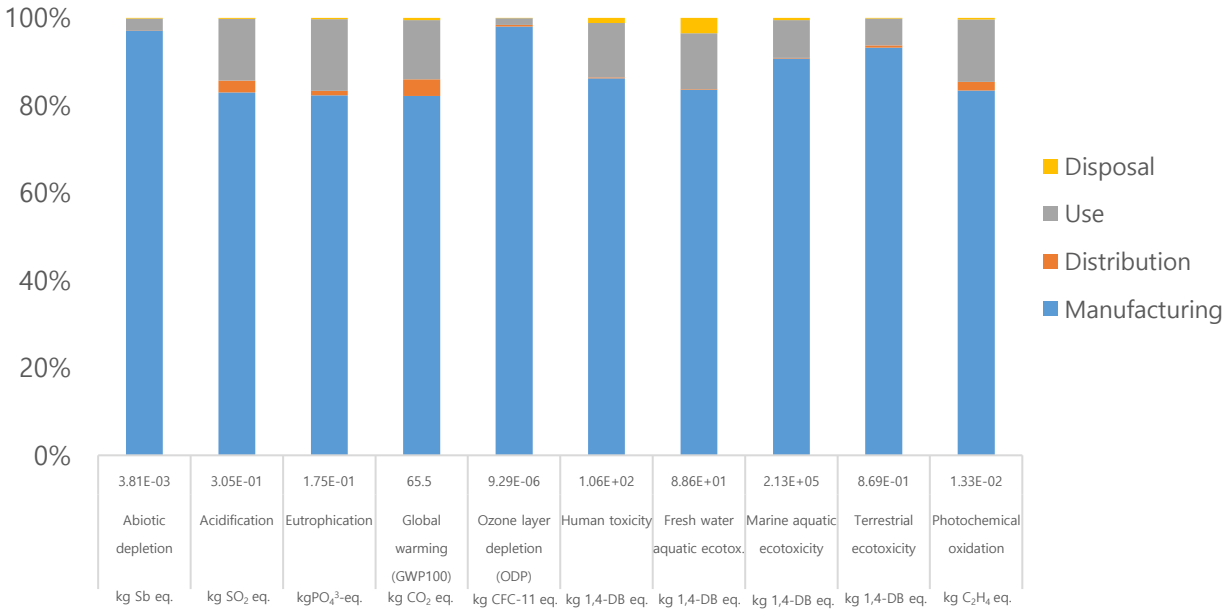
## Product Features

| | |
|---|---|
| Model name | SM-S928B(Galaxy S24 Ultra) |
| Dimension | 162.3 x 79 x 8.6 mm |
| Display | OLED 6.8” |
| Weight | Product&Acc. : 253.41 g<br>Packages : 124.63 g |

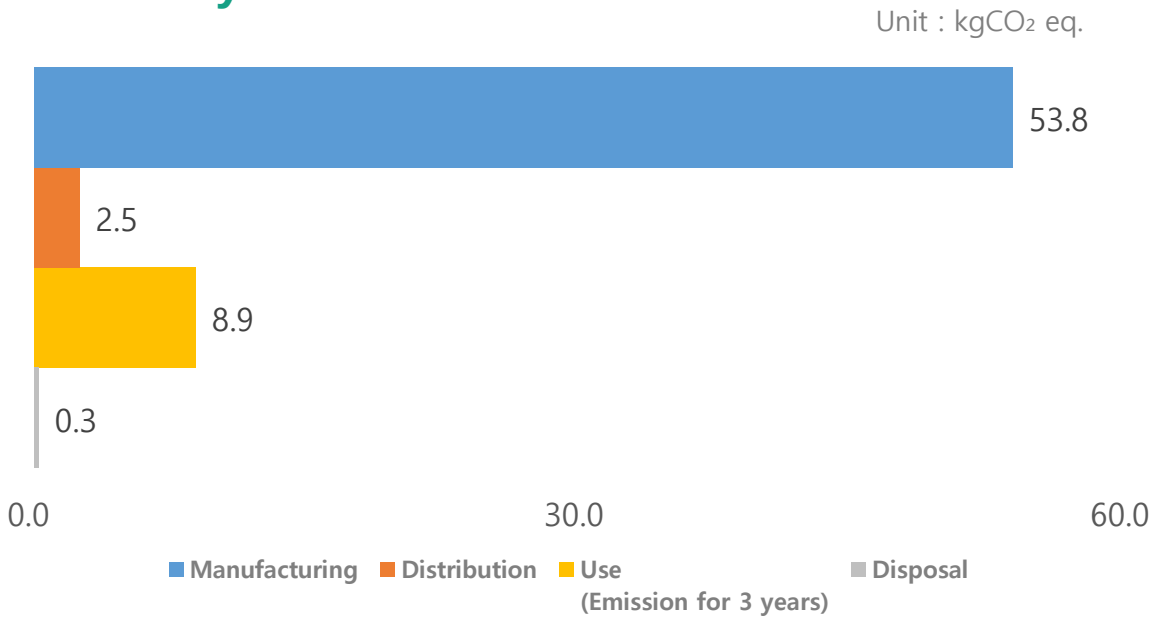
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

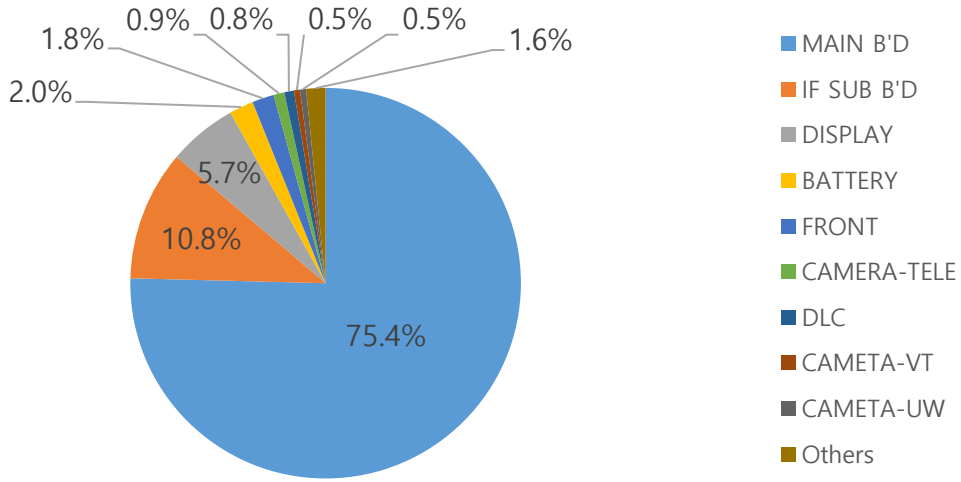
LCA Report Issuance Date : Feb 16, 2024

Webpage Publication Date of Summary of LCA : Feb 16, 2024

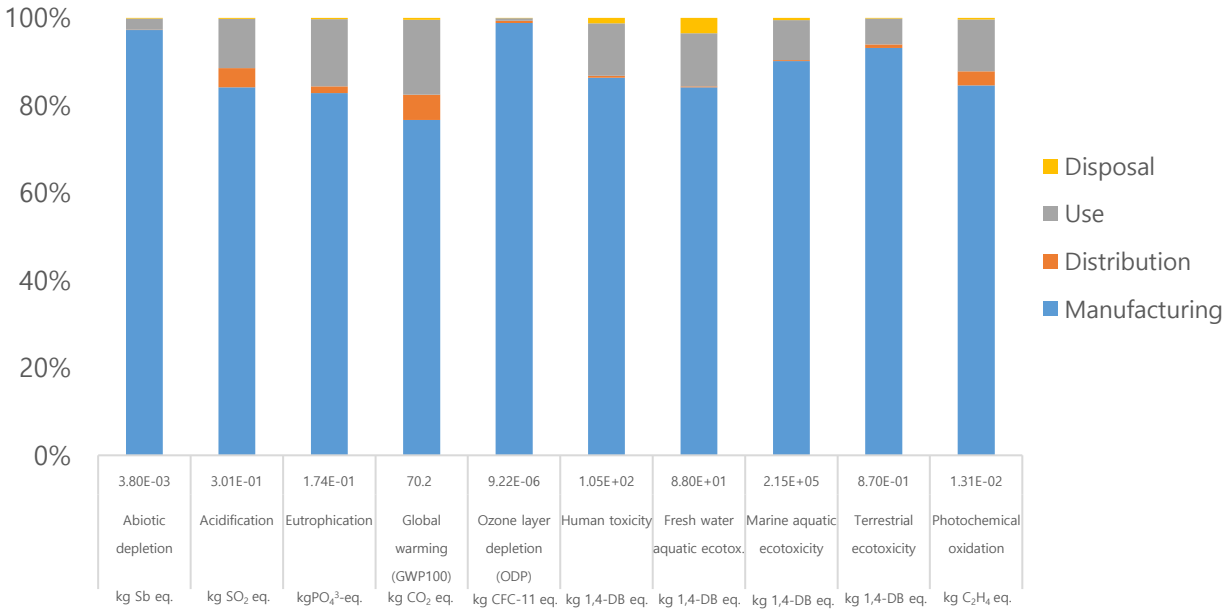
## Product Features

| | |
|---|---|
| Model name | SM-S928U(Galaxy S24 Ultra) |
| Dimension | 162.3 x 79 x 8.6 mm |
| Display | OLED 6.8” |
| Weight | Product&Acc. : 253.41 g<br>Packages : 124.63 g |

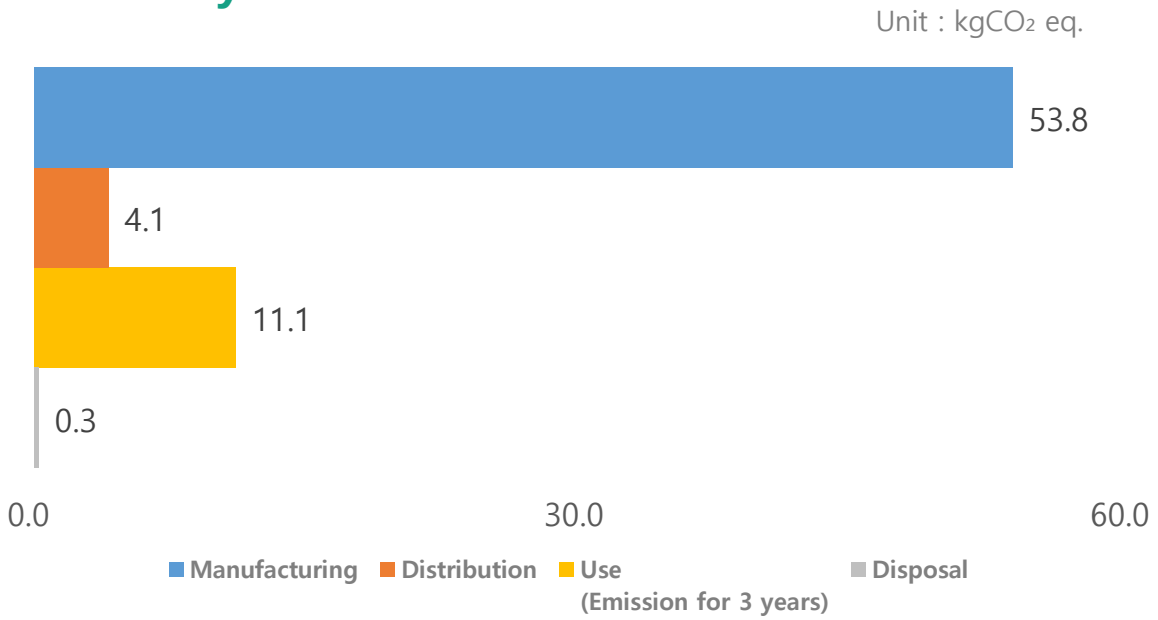
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24+

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

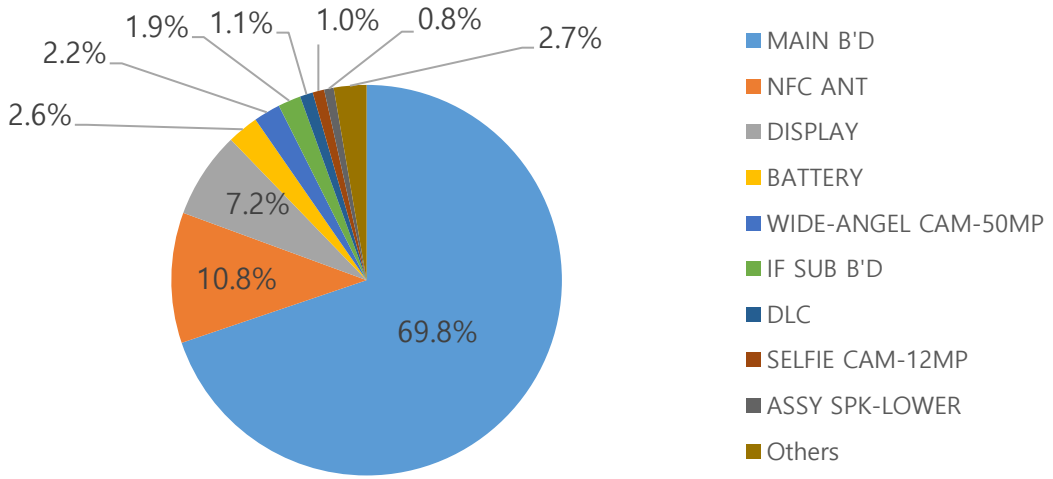
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

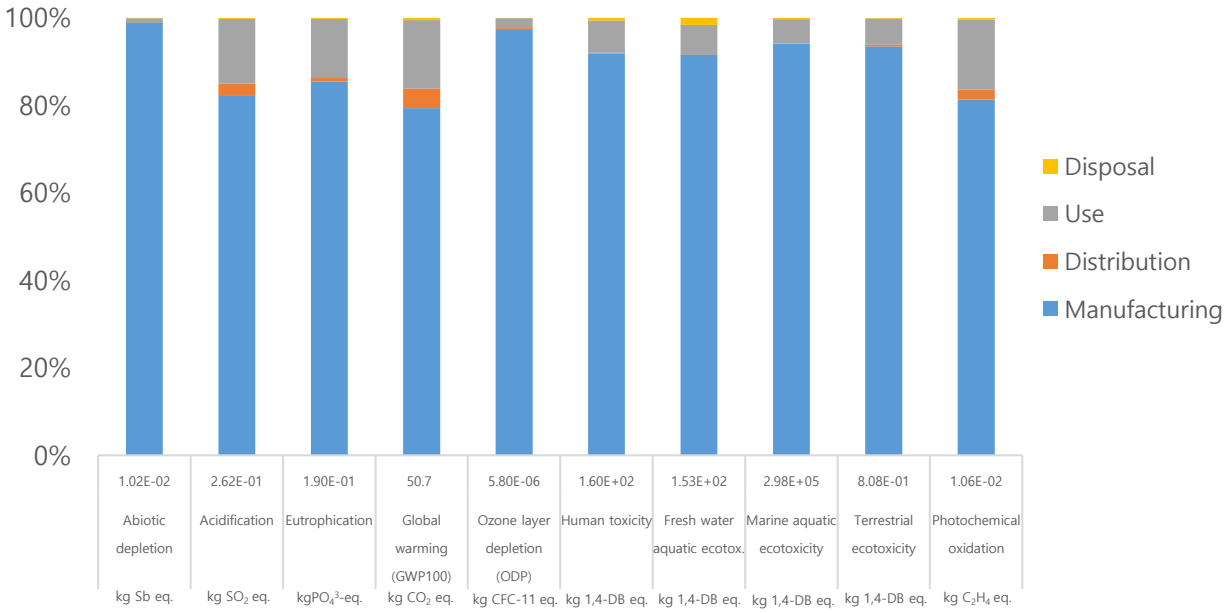
## Product Features

| | |
|---|---|
| Model name | SM-S926B(Galaxy S24+) |
| Dimension | 158.5 x 75.9 x 7.7 mm |
| Display | OLED 6.7” |
| Weight | Product&Acc. : 215.42 g<br>Packages : 124.05 g |

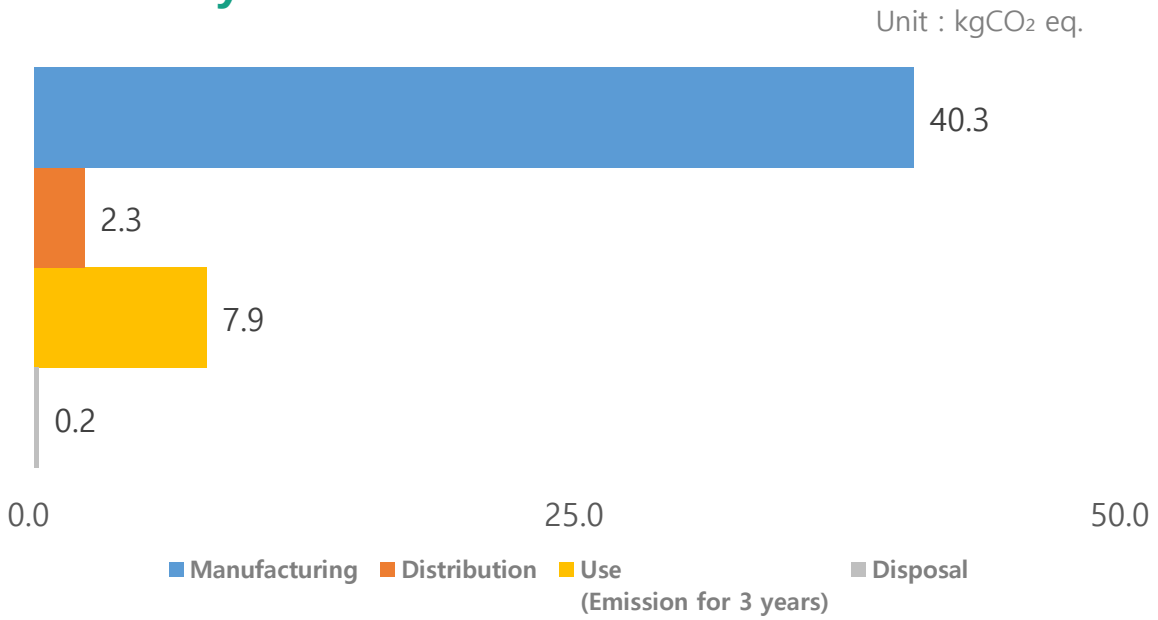
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24+

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

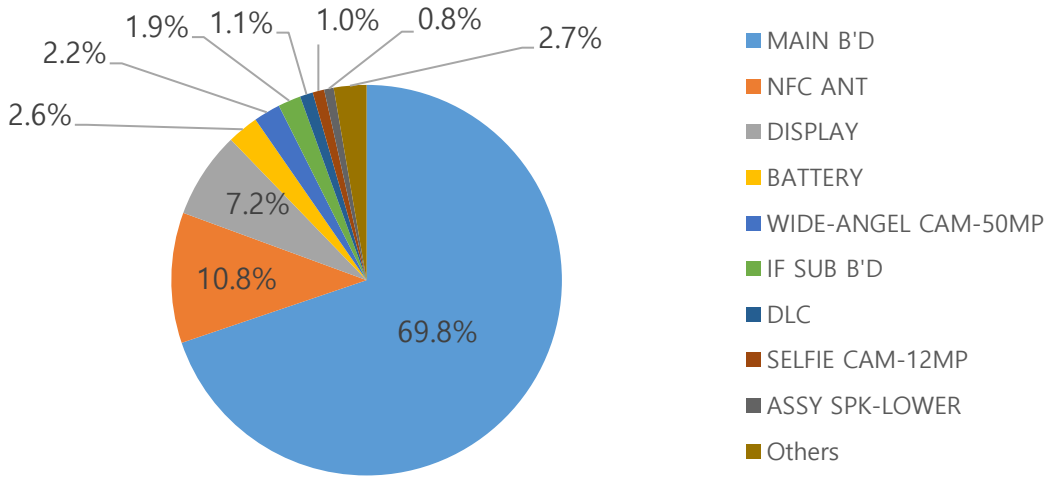
LCA Report Issuance Date : Feb 16, 2024

Webpage Publication Date of Summary of LCA : Feb 16, 2024

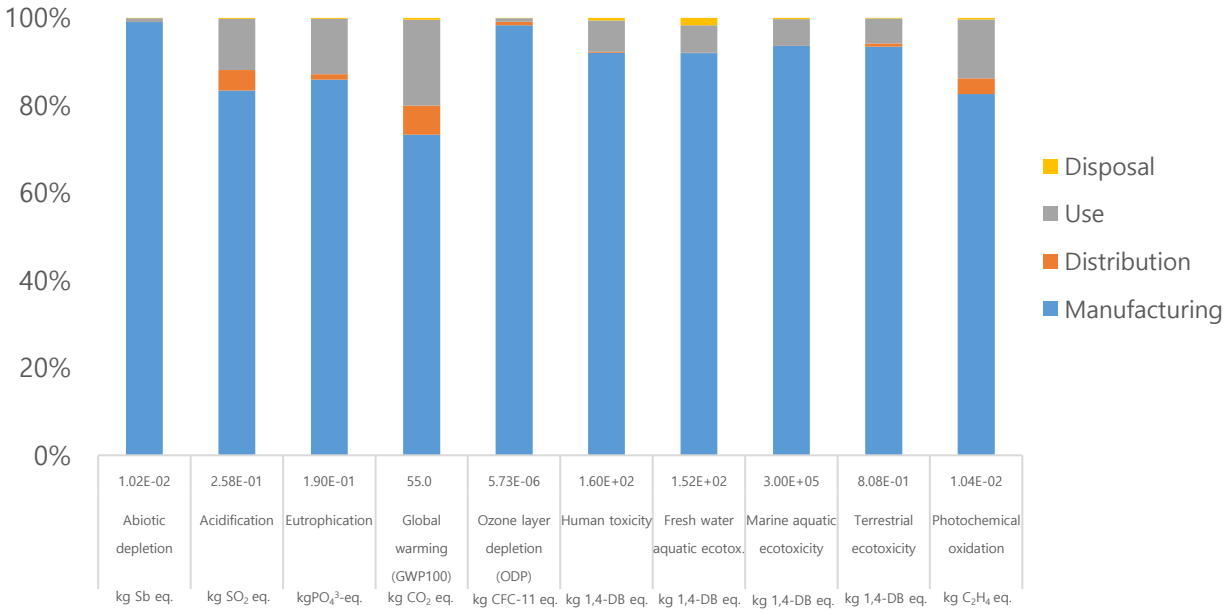
## Product Features

| | |
|---|---|
| Model name | SM-S926U(Galaxy S24+) |
| Dimension | 158.5 x 75.9 x 7.7 mm |
| Display | OLED 6.7” |
| Weight | Product&Acc. : 215.42 g<br>Packages : 124.05 g |

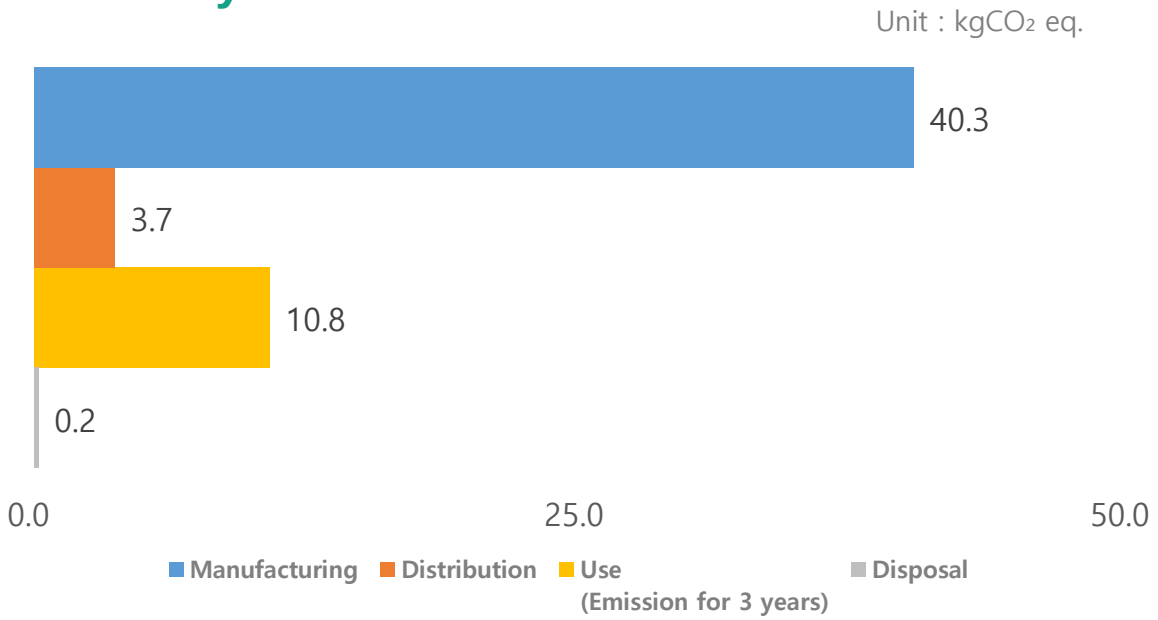
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

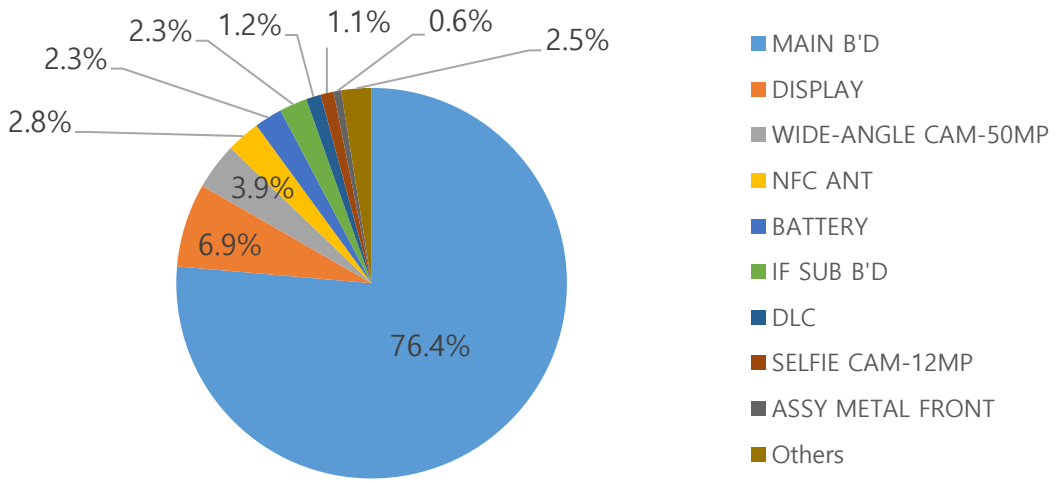
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

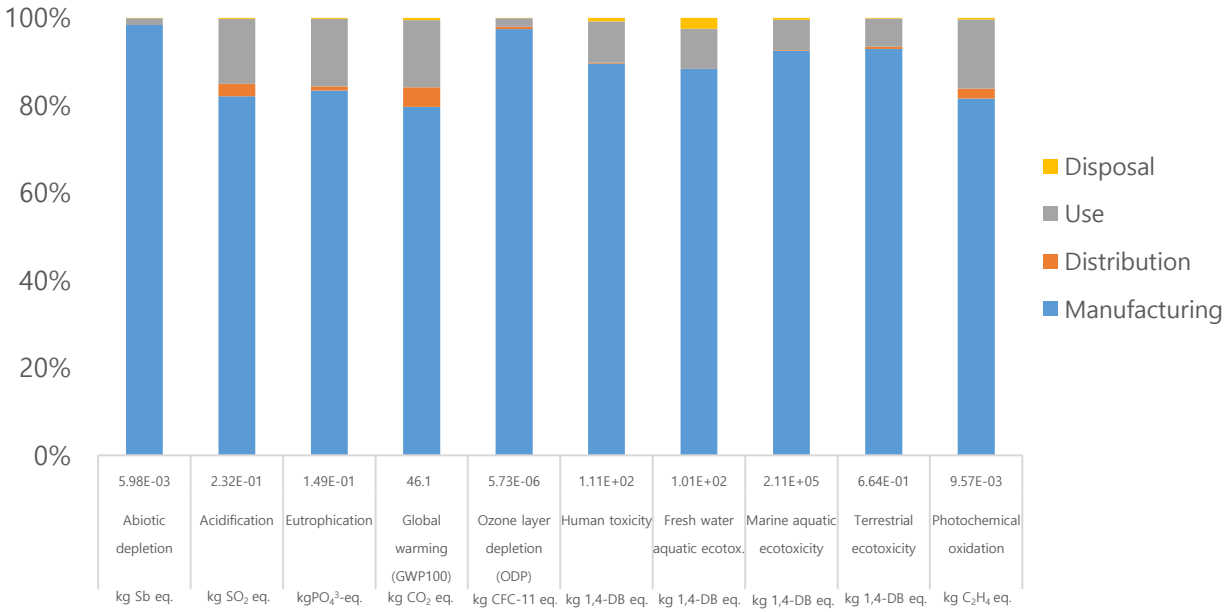
## Product Features

| | |
|---|---|
| Model name | SM-S921B(Galaxy S24) |
| Dimension | 147.0 x 70.6 x 7.6 mm |
| Display | OLED 6.2” |
| Weight | Product&Acc. : 186.42 g<br>Packages : 118.64 g |

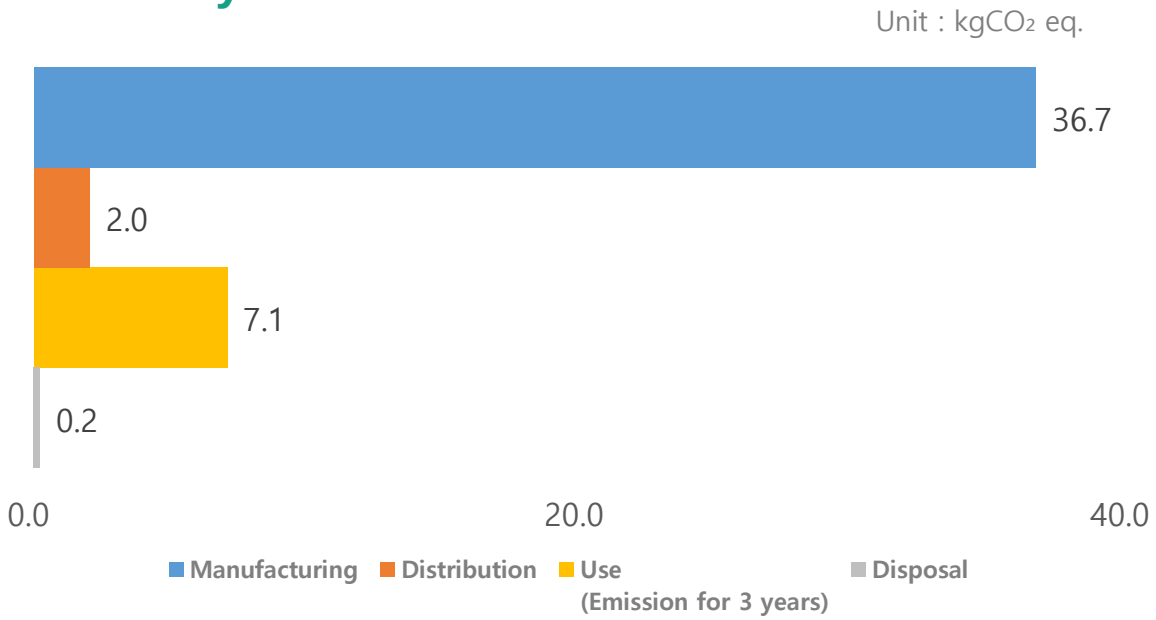
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S24

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

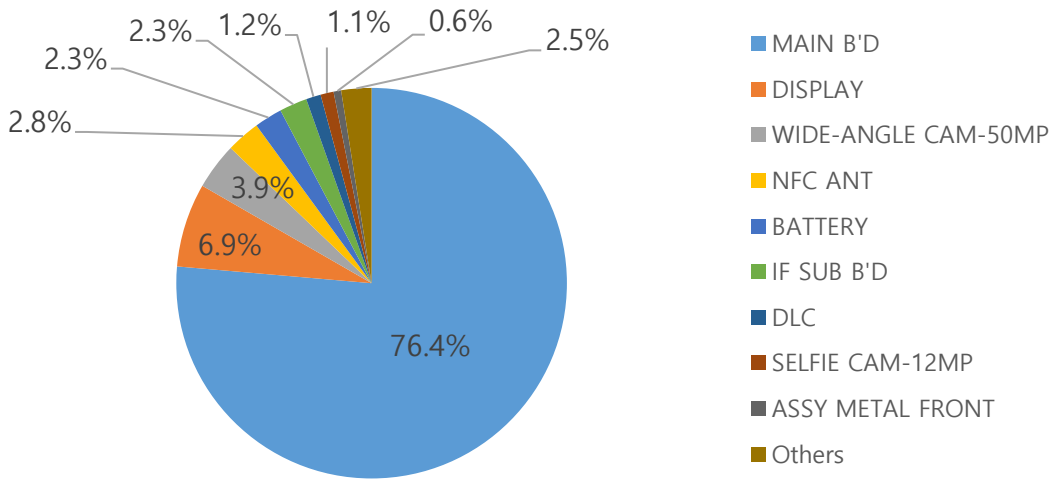
LCA Report Issuance Date : Feb 16, 2024

Webpage Publication Date of Summary of LCA : Feb 16, 2024

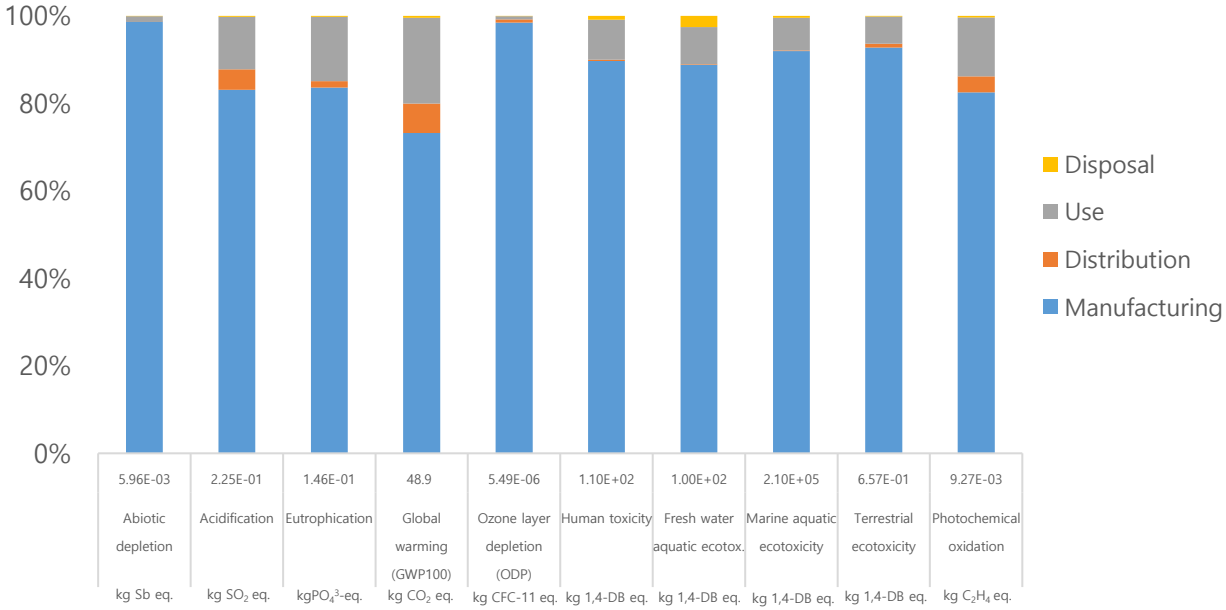
## Product Features

| | |
|---|---|
| Model name | SM-S921U(Galaxy S24) |
| Dimension | 147.0 x 70.6 x 7.6mm |
| Display | OLED 6.2” |
| Weight | Product&Acc. : 186.42 g<br>Packages : 118.88 g |

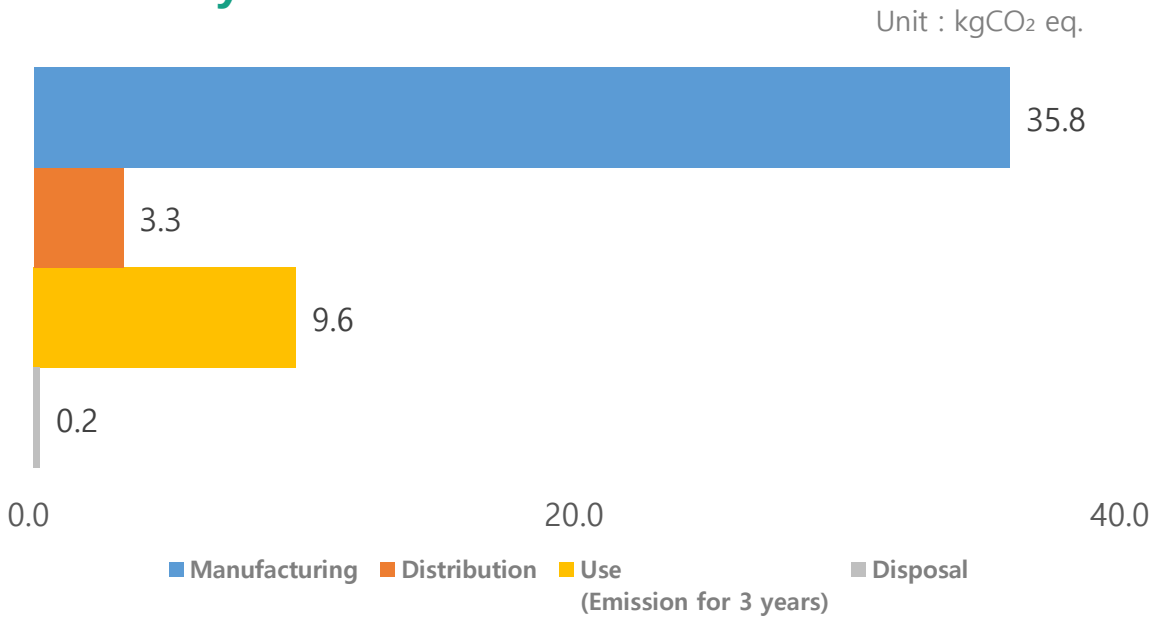
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A25 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

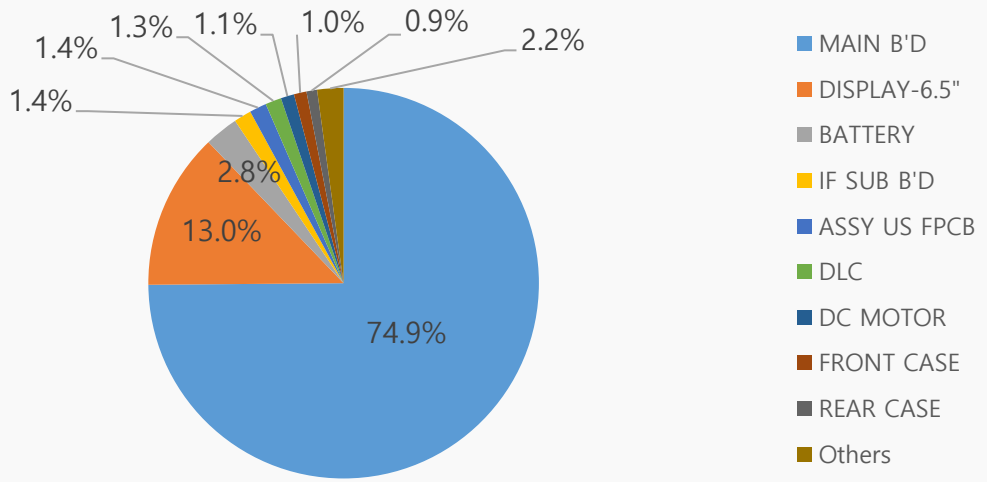
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

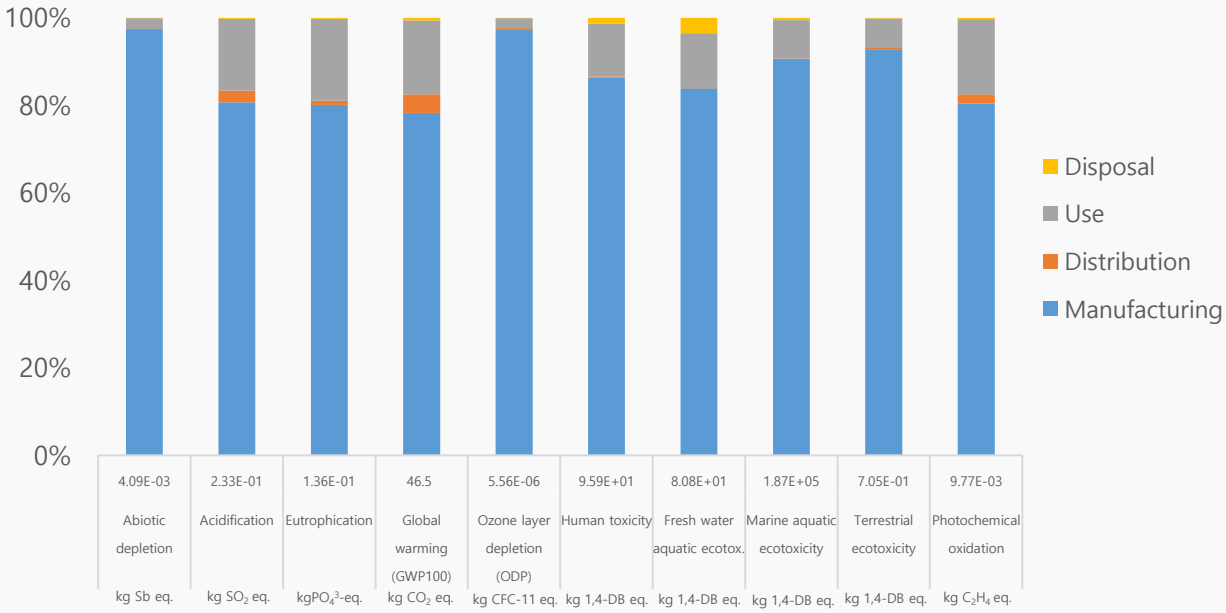
## Product Features

| | |
|---|---|
| **Model name** | SM-A256B(Galaxy A25 5G) |
| **Dimension** | 161.0 x 76.5 x 8.3 mm |
| **Display** | OLED 6.5” |
| **Weight** | Product&Acc. : 216.88 g<br>Packages : 77.29 g |

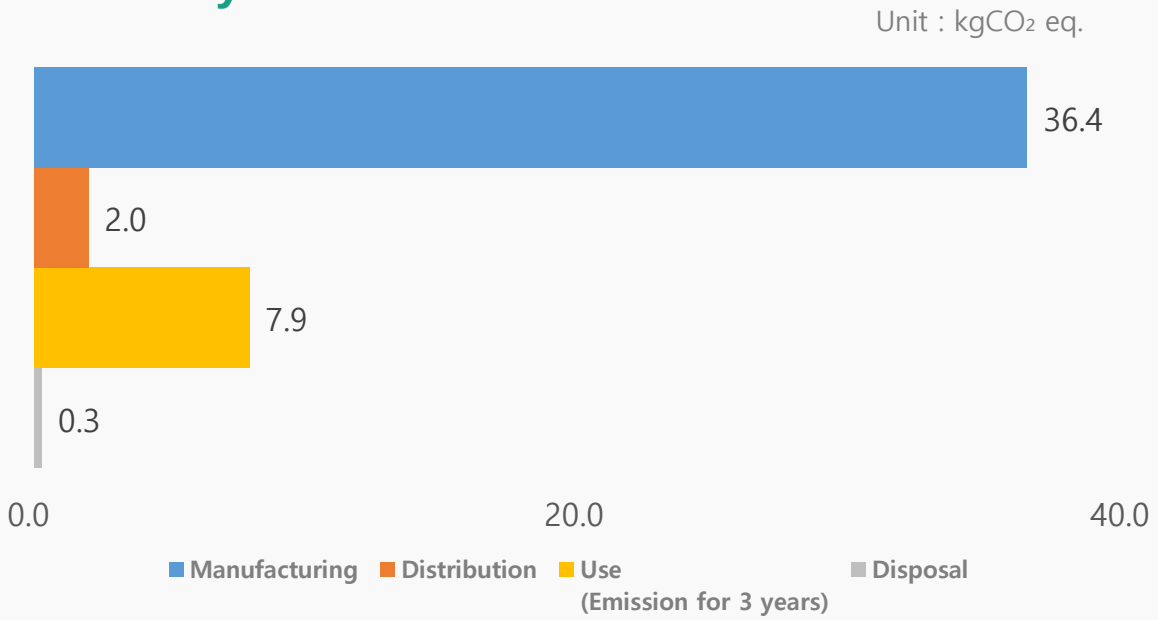
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A25 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

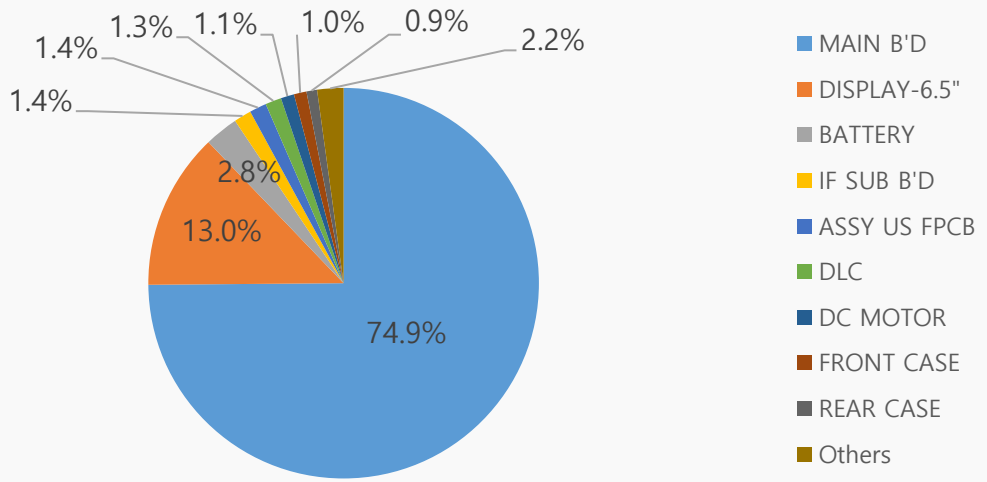
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

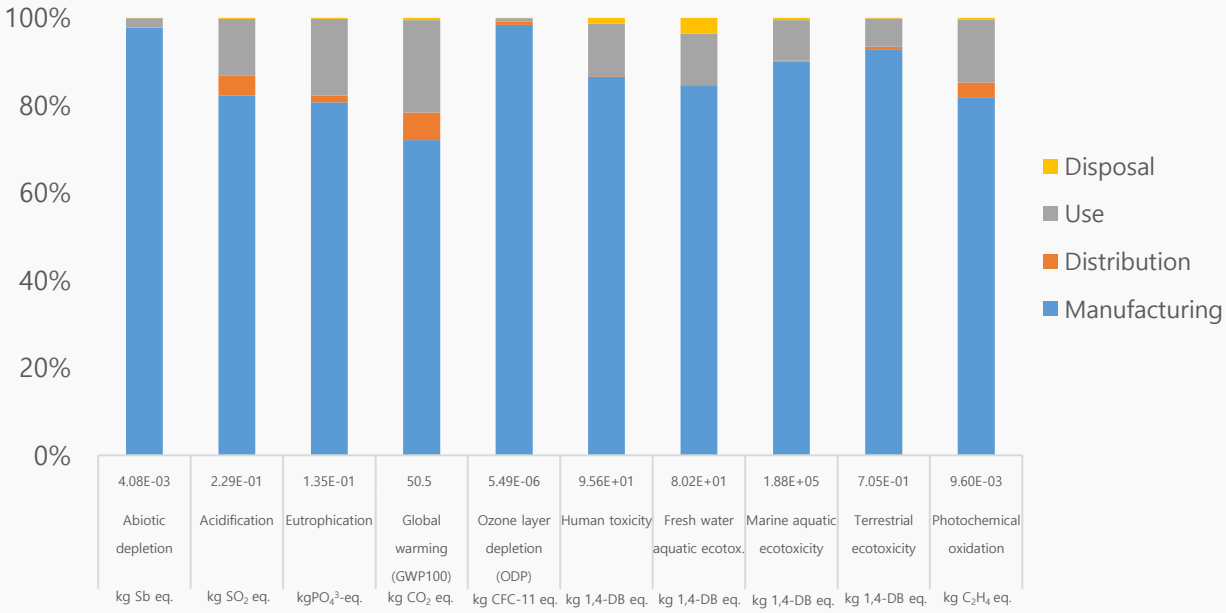
## Product Features

| | |
|---|---|
| **Model name** | SM-A256U(Galaxy A25 5G) |
| **Dimension** | 161.0 x 76.5 x 8.3 mm |
| **Display** | OLED 6.5” |
| **Weight** | Product&Acc. : 216.88 g<br>Packages : 77.29 g |

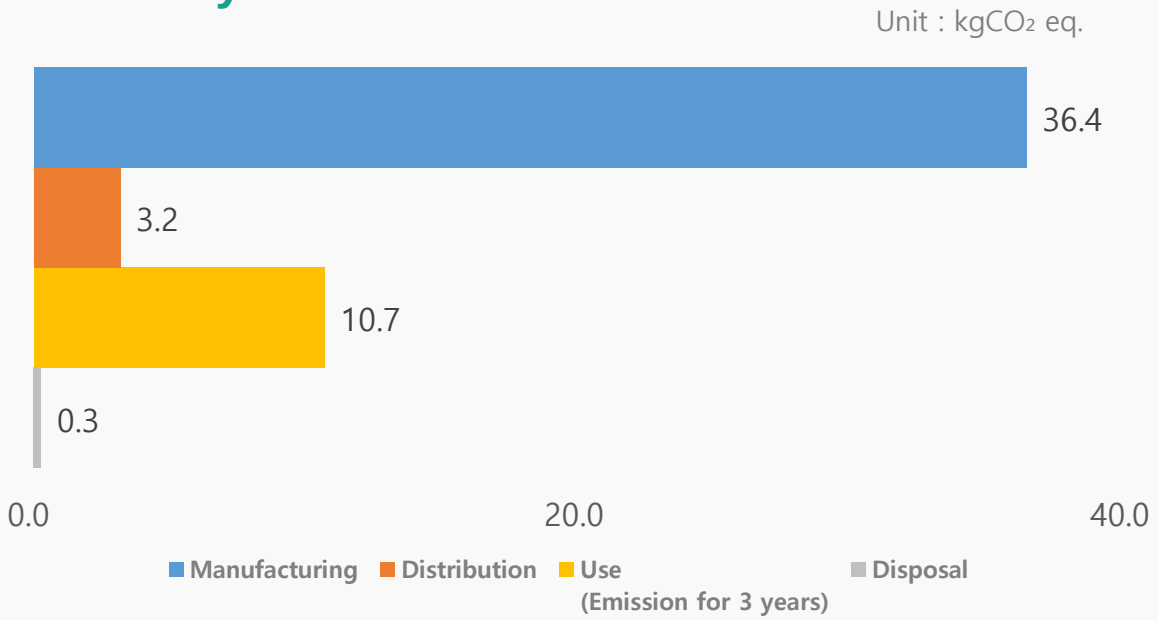
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A15

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Lifecycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

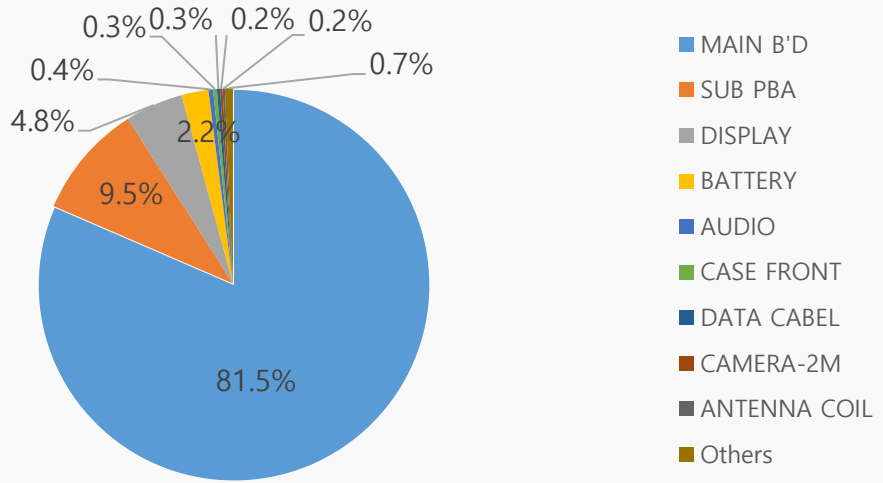
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to SEA |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

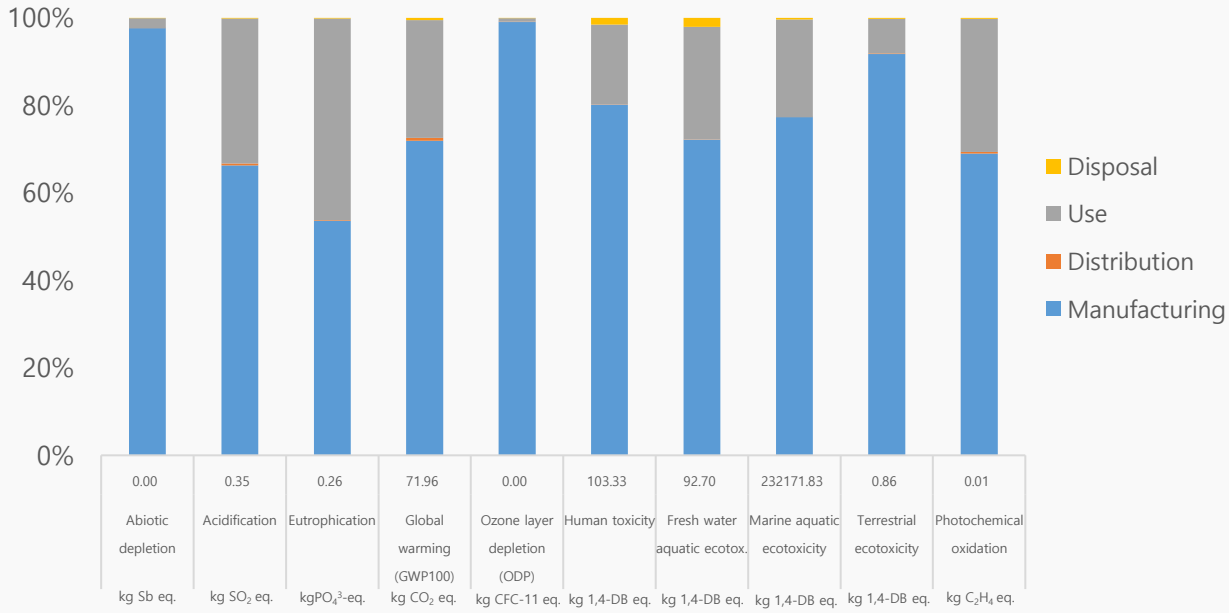
## Product Features

| | |
|---|---|
| **Model name** | SM-A155E(Galaxy A15) |
| **Dimension** | 160.1 x 76.8 x 8.4 mm |
| **Display** | 6.5" AMOLED 2X |
| **Weight** | Product&Acc. : 222.06 g<br>Packages : 91.7 g |

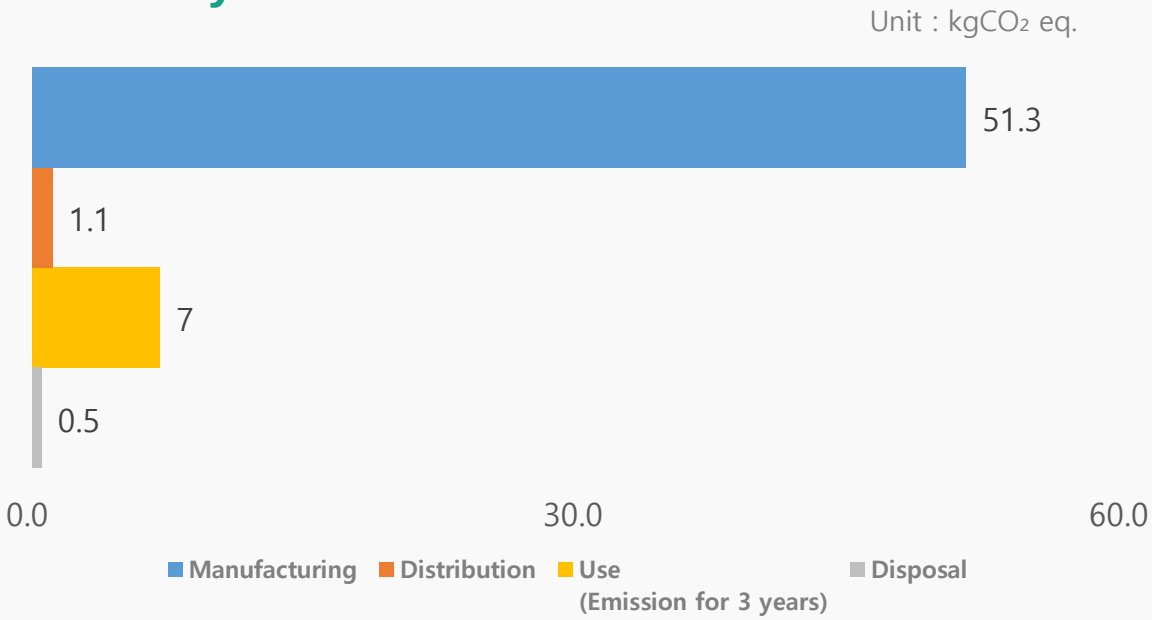
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A15 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Lifecycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

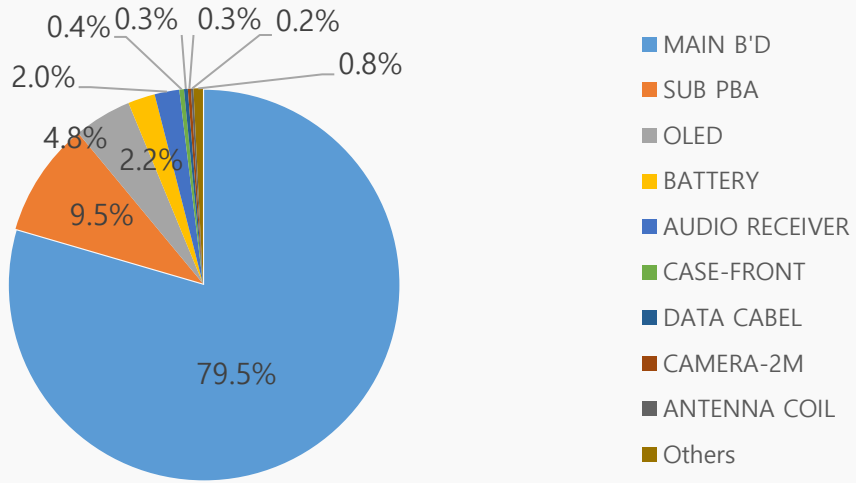
LCA Report Issuance Date : Feb 16, 2024

Webpage Publication Date of Summary of LCA : Feb 16, 2024

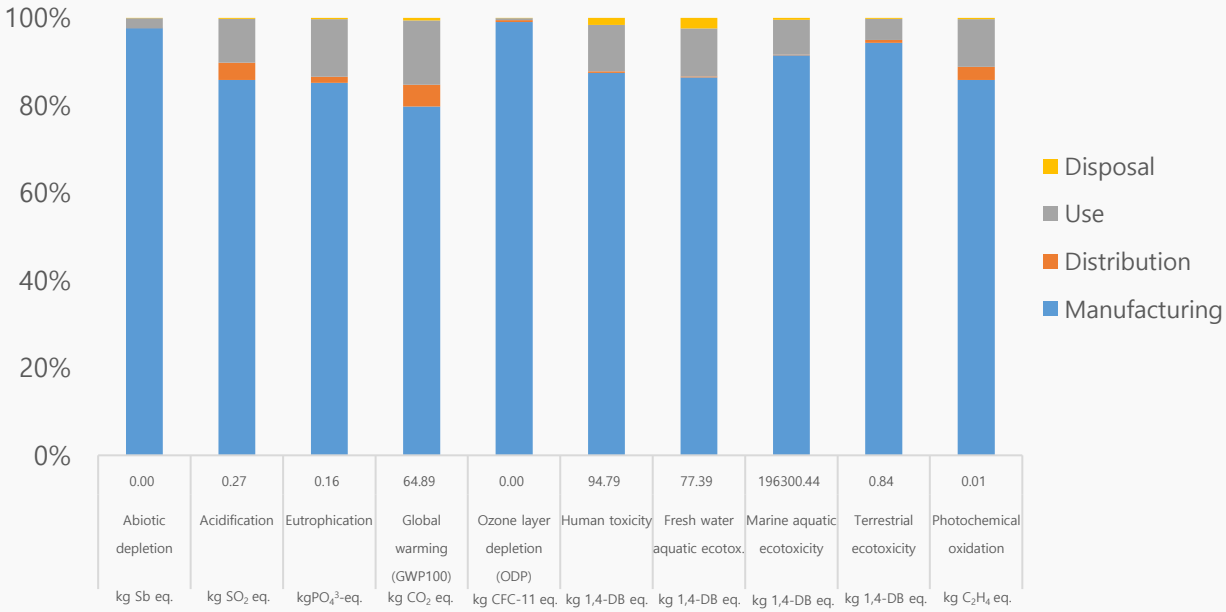
## Product Features

| | |
|---|---|
| Model name | SM-A156U(Galaxy A15 5G) |
| Dimension | 160.1 x 76.8 x 8.4 mm |
| Display | 6.5" AMOLED 2X |
| Weight | Product&Acc. : 222.06 g<br>Packages : 56.4 g |

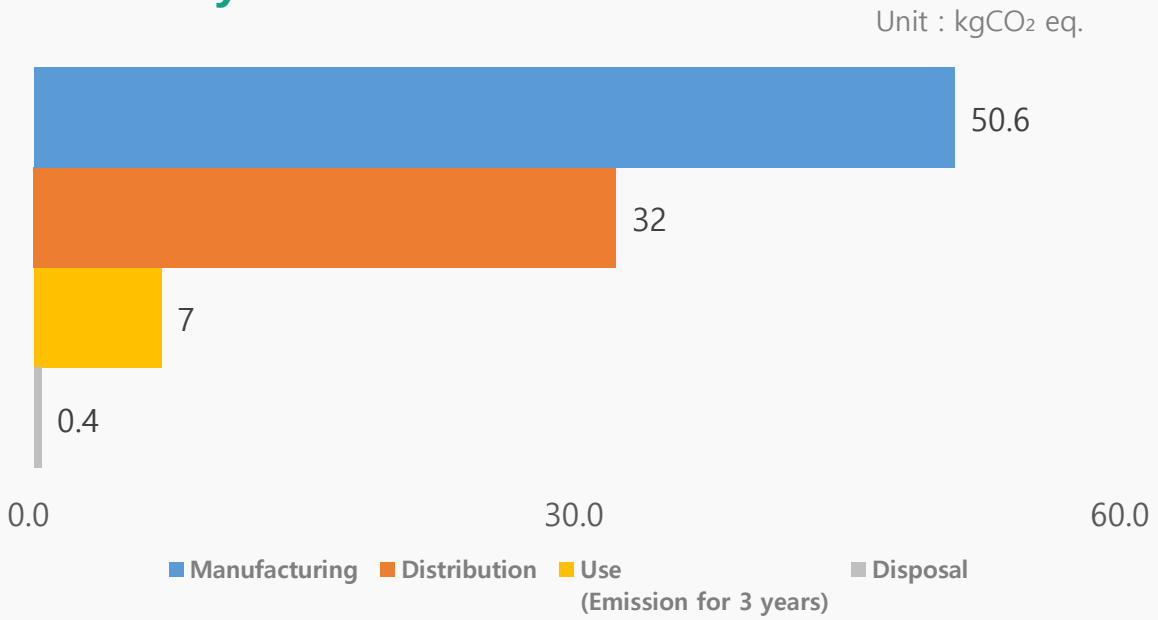
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A15 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Lifecycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

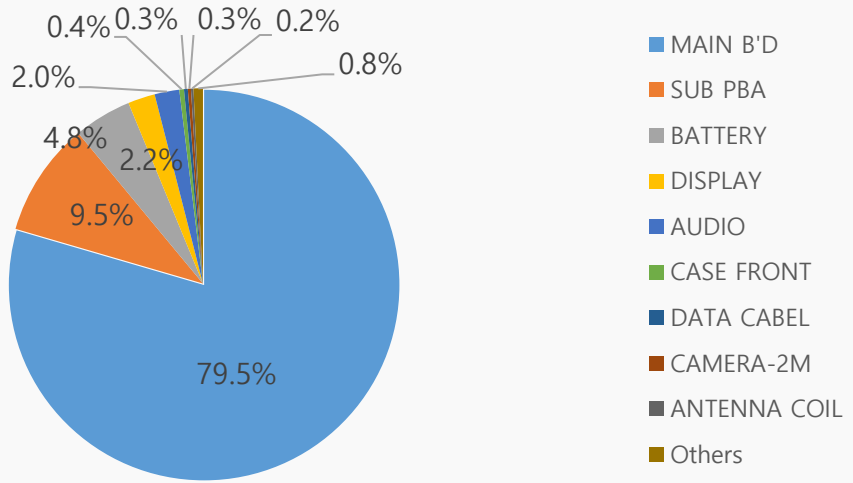
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to SEA |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

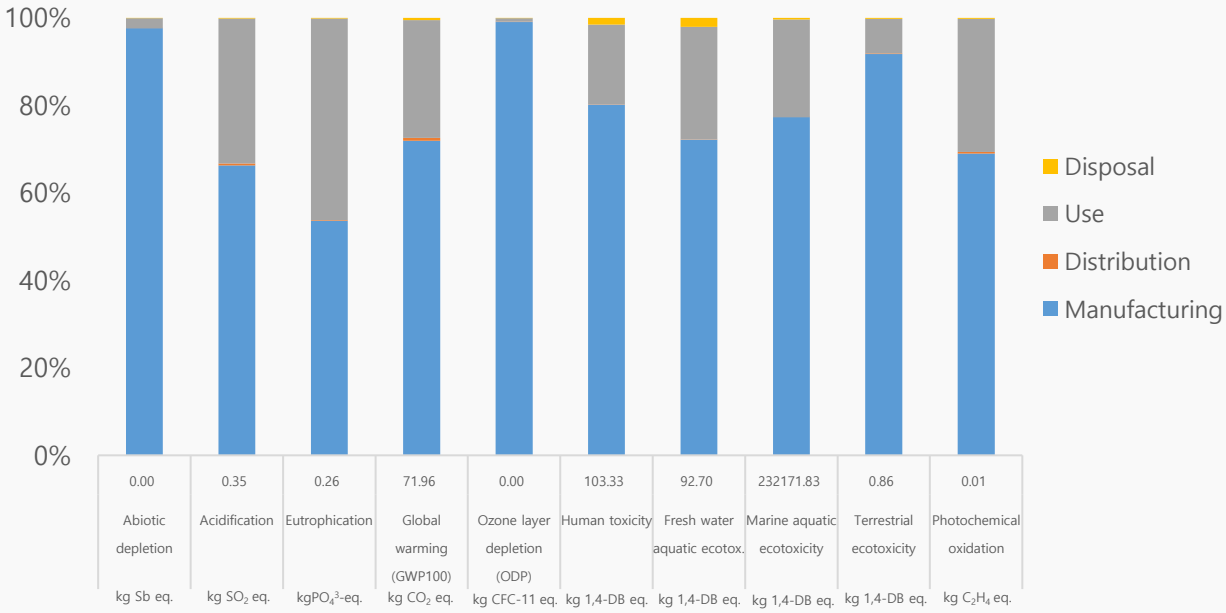
## Product Features

| | |
|---|---|
| Model name | SM-A156E(Galaxy A15 5G) |
| Dimension | 160.1 x 76.8 x 8.4 mm |
| Display | 6.5" AMOLED 2X |
| Weight | Product&Acc. : 222.06 g<br>Packages : 91.7 g |

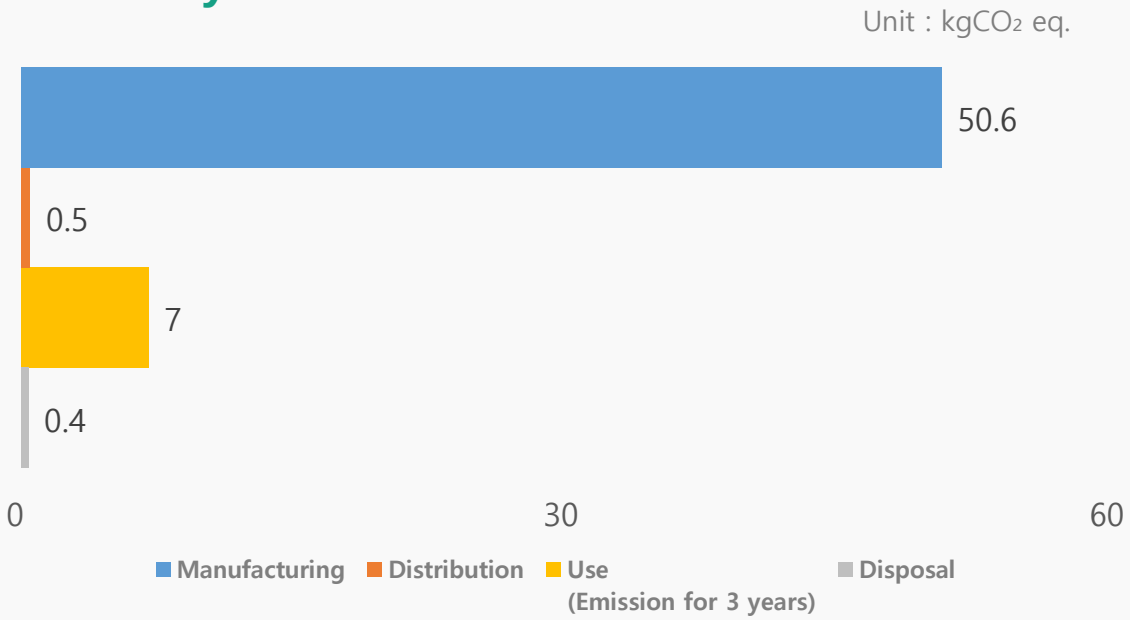
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M34 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

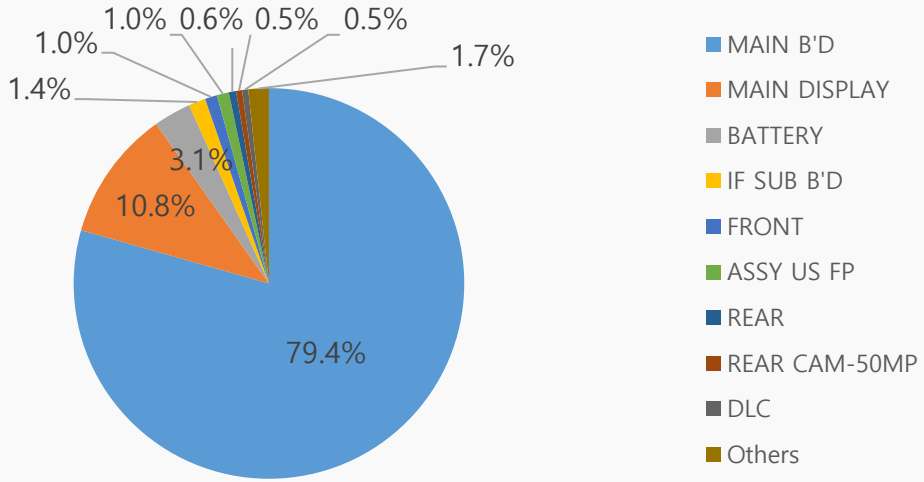
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From India to India |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

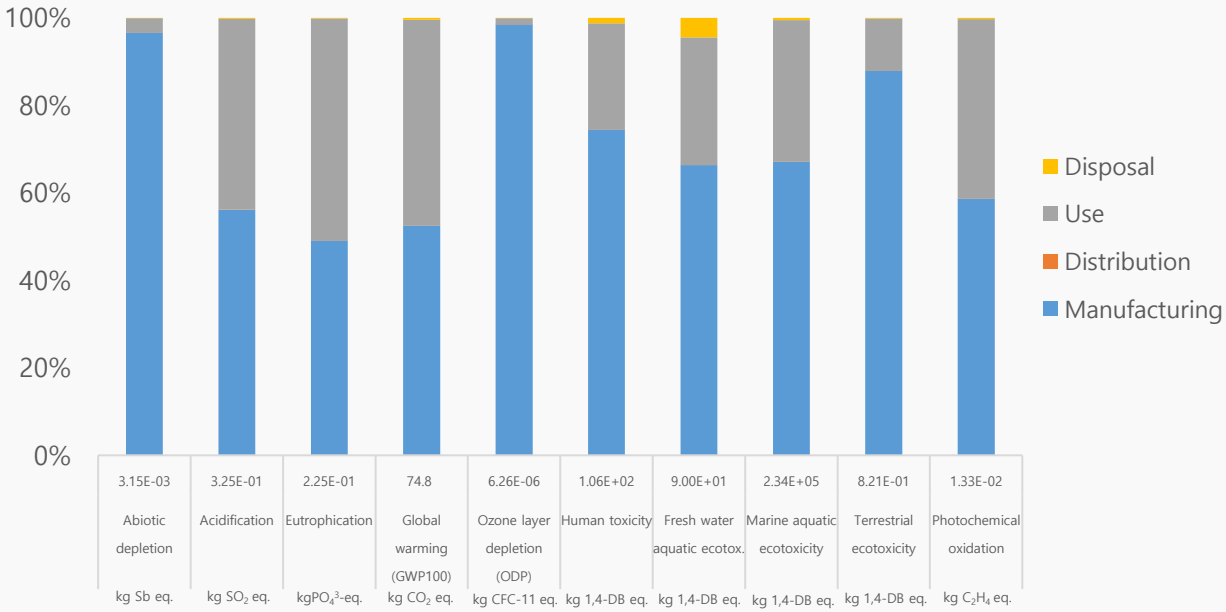
## Product Features

| | |
|---|---|
| **Model name** | SM-M346B(Galaxy M34 5G) |
| **Dimension** | 161.7 x 77.2 x 8.8 mm |
| **Display** | OLED 6.5” |
| **Weight** | Product&Acc. : 229.16 g<br>Packages : 96.92g |

## Global Warming Impact Profile

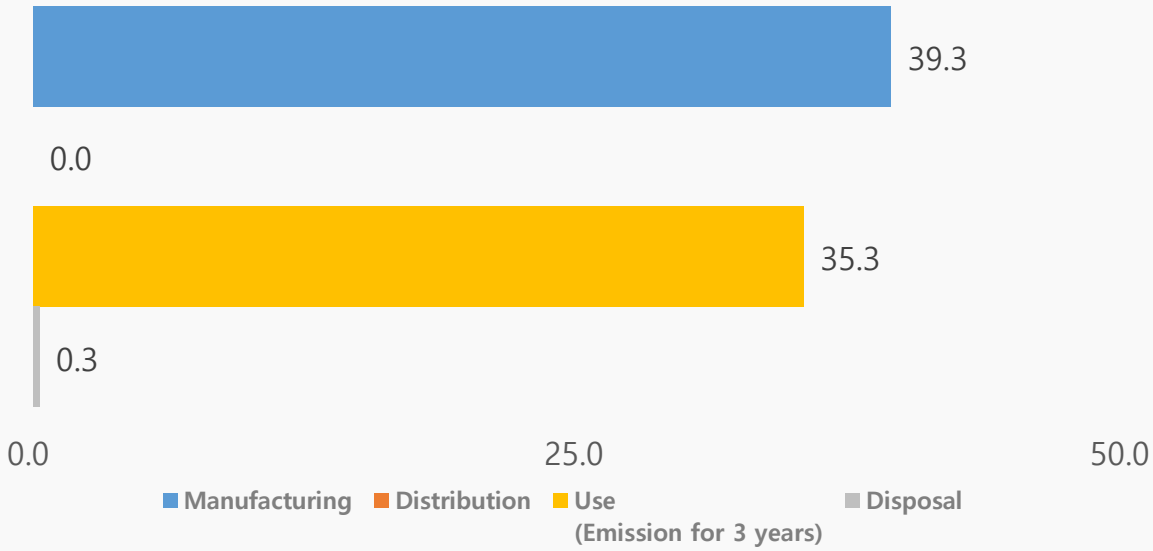



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M44 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

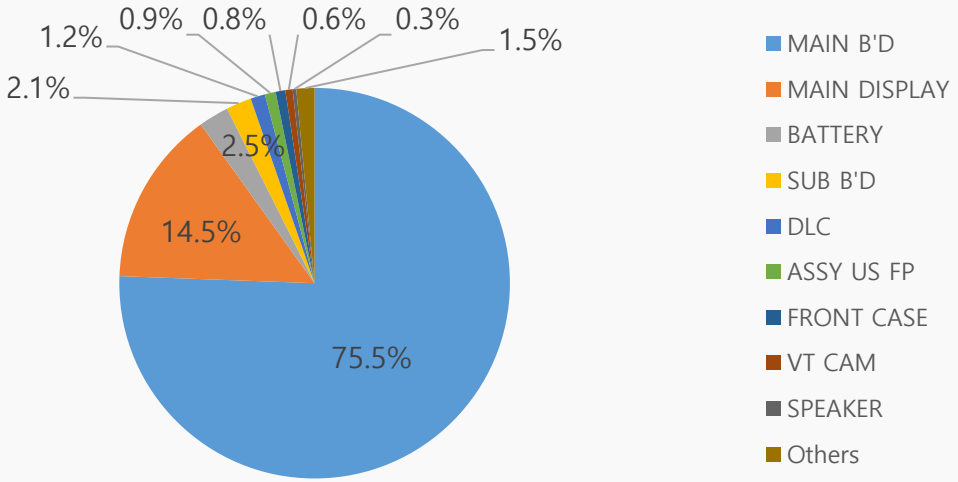
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to KOR |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

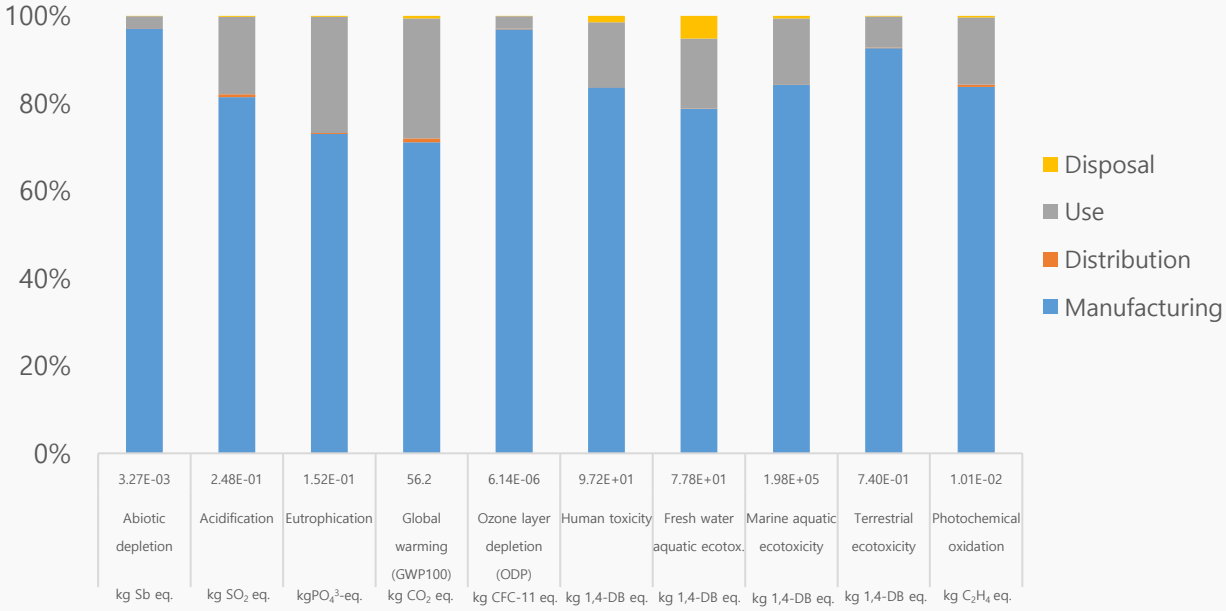
## Product Features

| | |
|---|---|
| Model name | SM-M446K(Galaxy M44 5G) |
| Dimension | 167.7 x 78.0 x 9.1 mm |
| Display | FHD+ 6.6” |
| Weight | Product&Acc. : 235.95 g<br>Packages : 102.19 g |

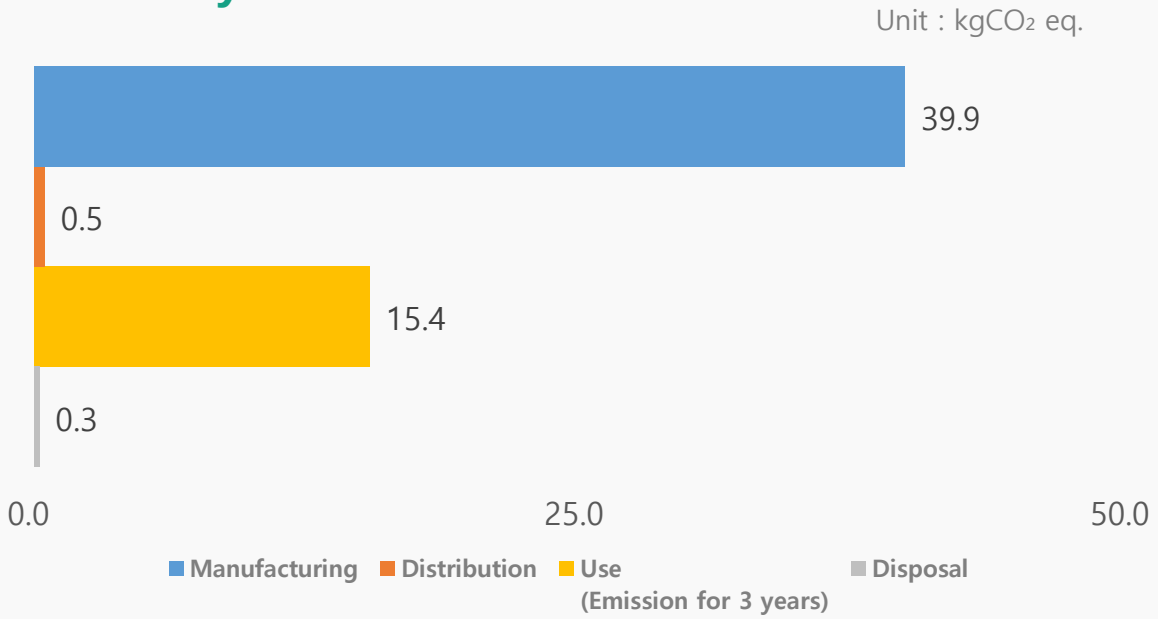
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S23 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

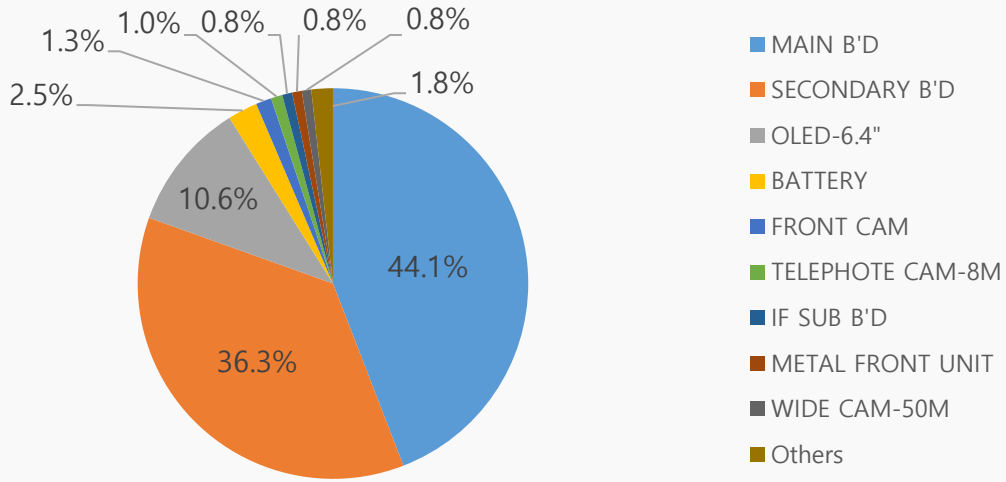
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

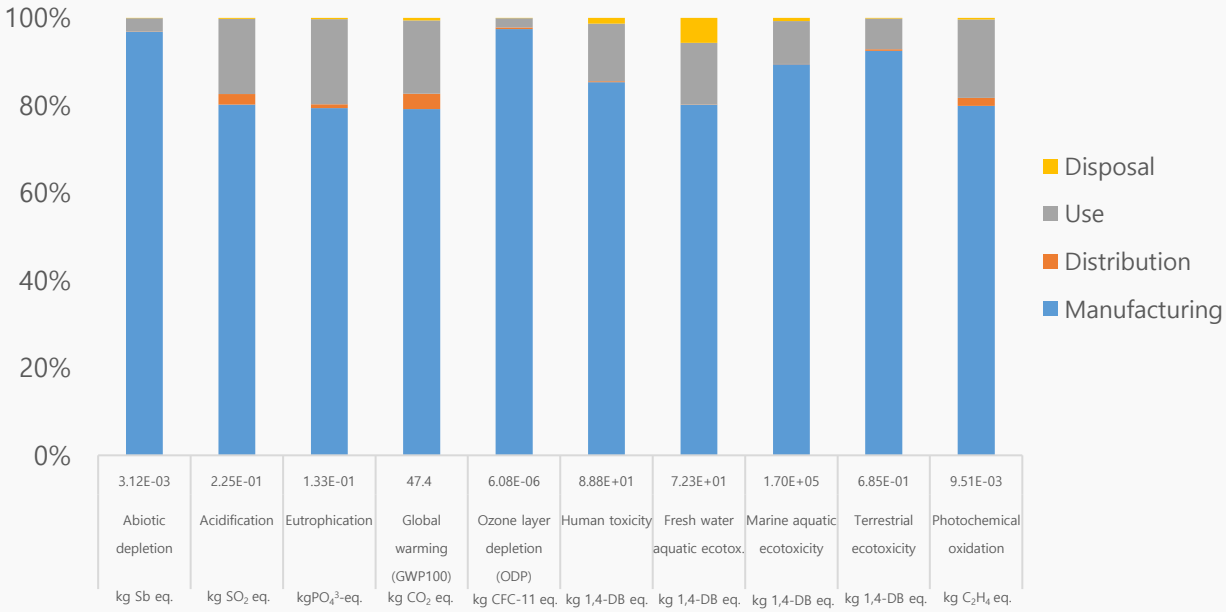
## Product Features

| | |
|---|---|
| Model name | SM-S711B(Galaxy S23 FE) |
| Dimension | 158.0 x 76.5 x 8.2 mm |
| Display | OLED 6.4” |
| Weight | Product&Acc. : 228.99 g<br>Packages : 116.54 g |

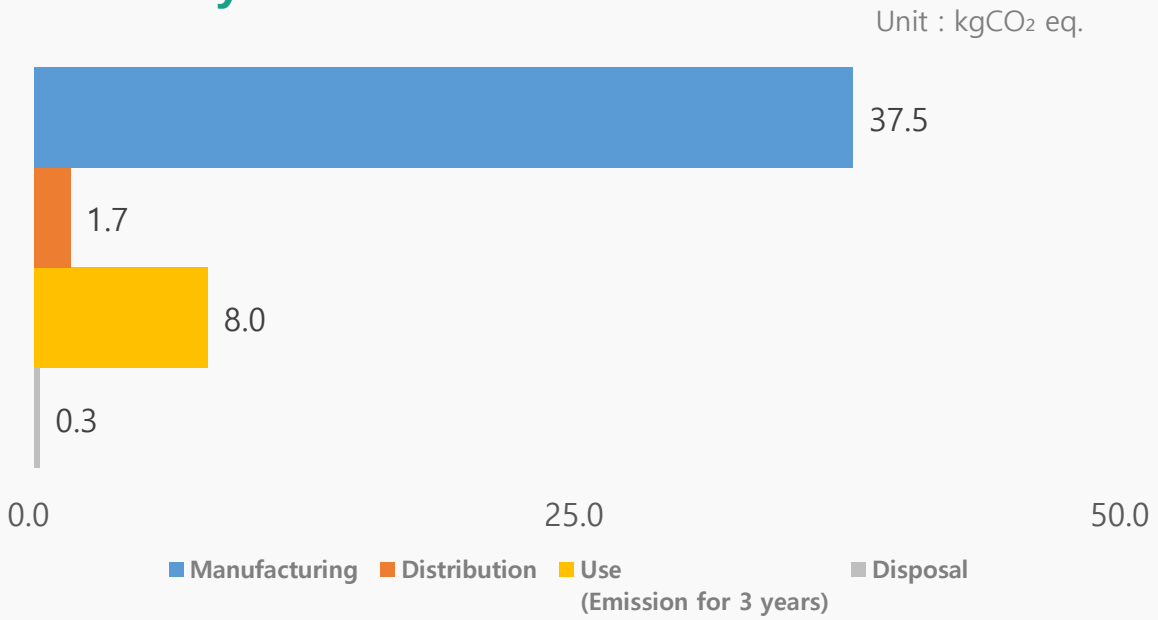
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S23 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

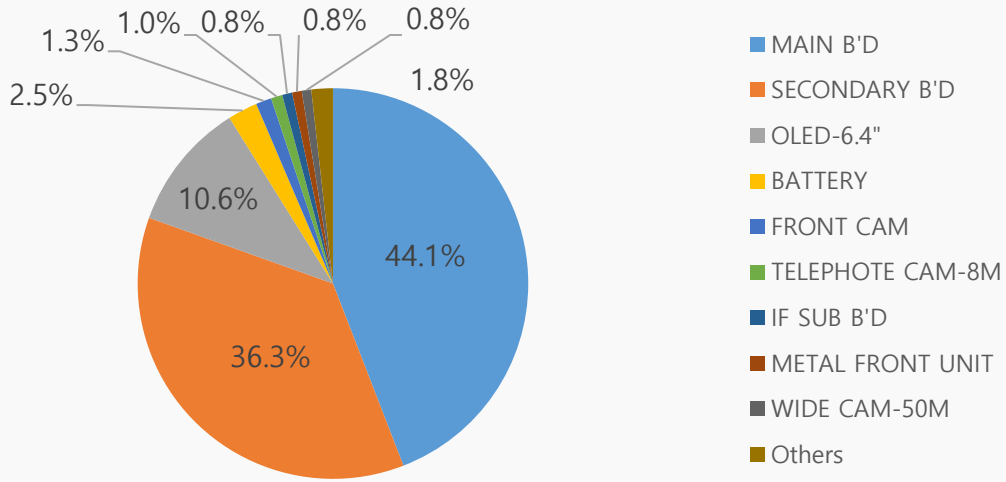
LCA Report Issuance Date : Nov 30, 2023

Webpage Publication Date of Summary of LCA : Nov 30, 2023

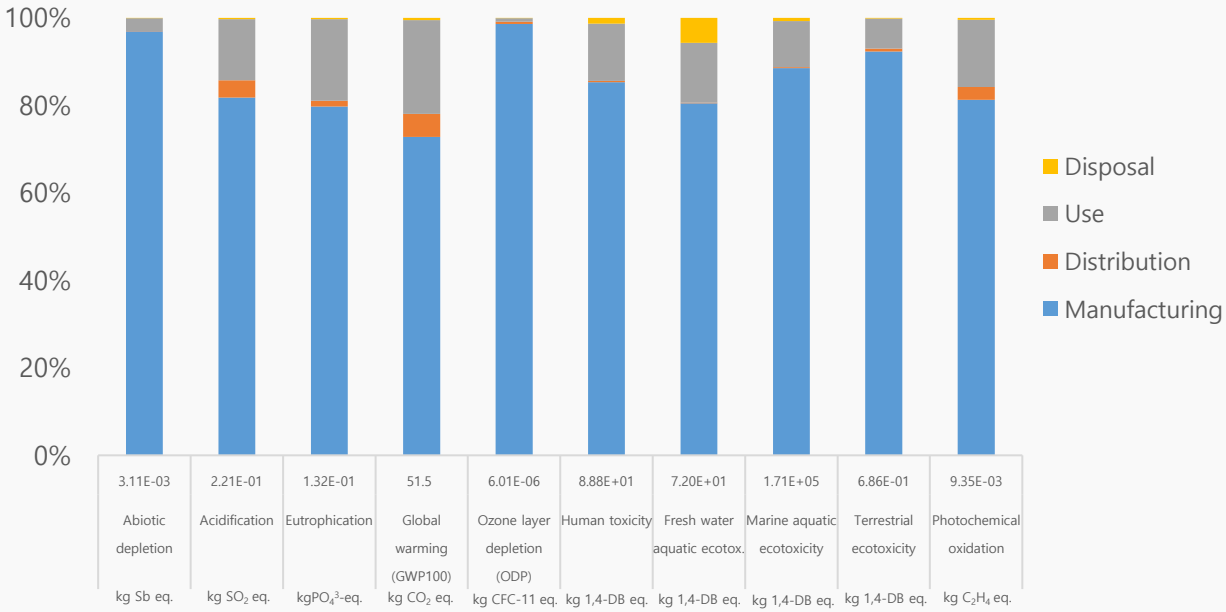
## Product Features

| | |
|---|---|
| Model name | SM-S711U(Galaxy S23 FE) |
| Dimension | 158.0 x 76.5 x 8.2mm |
| Display | OLED 6.4” |
| Weight | Product&Acc. : 228.99 g<br>Packages : 116.54 g |

## Global Warming Impact Profile

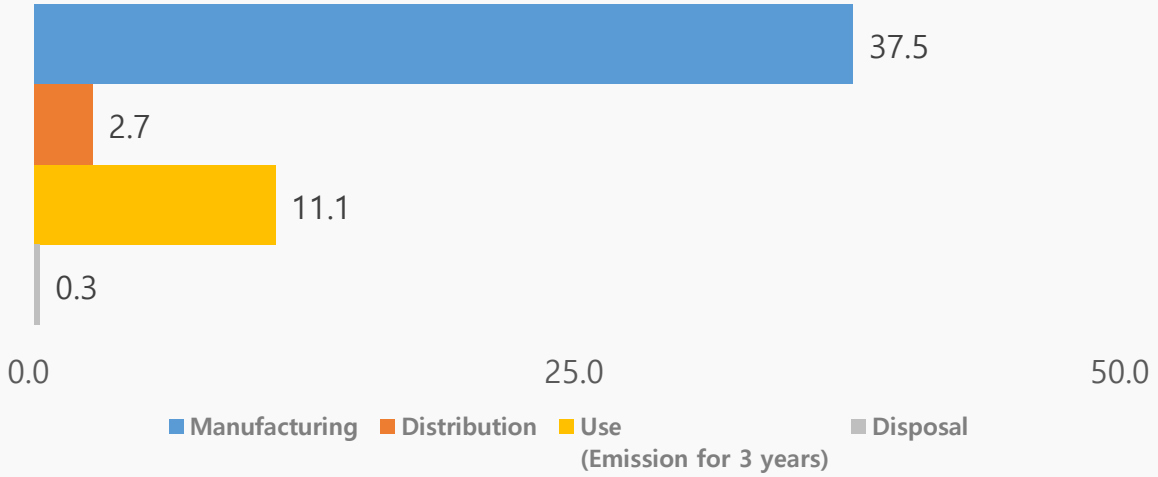



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Flip5

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

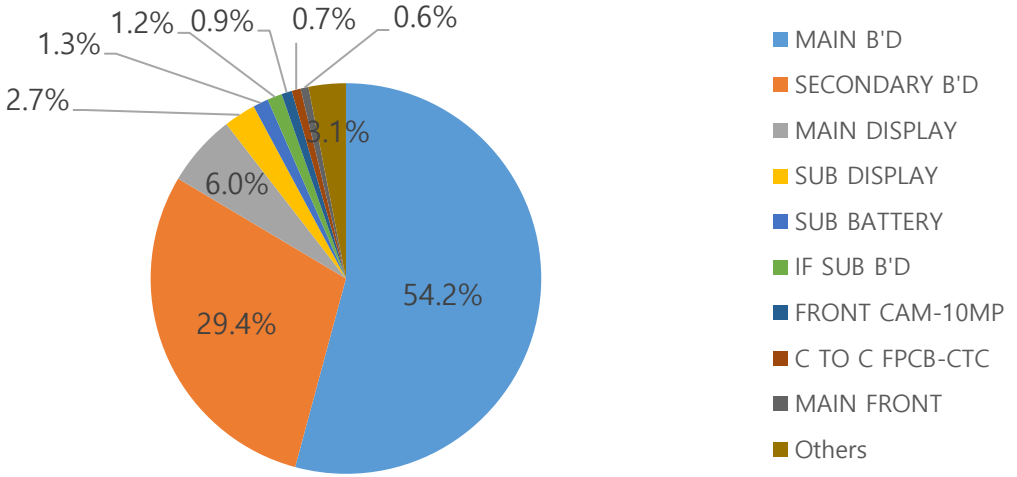
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

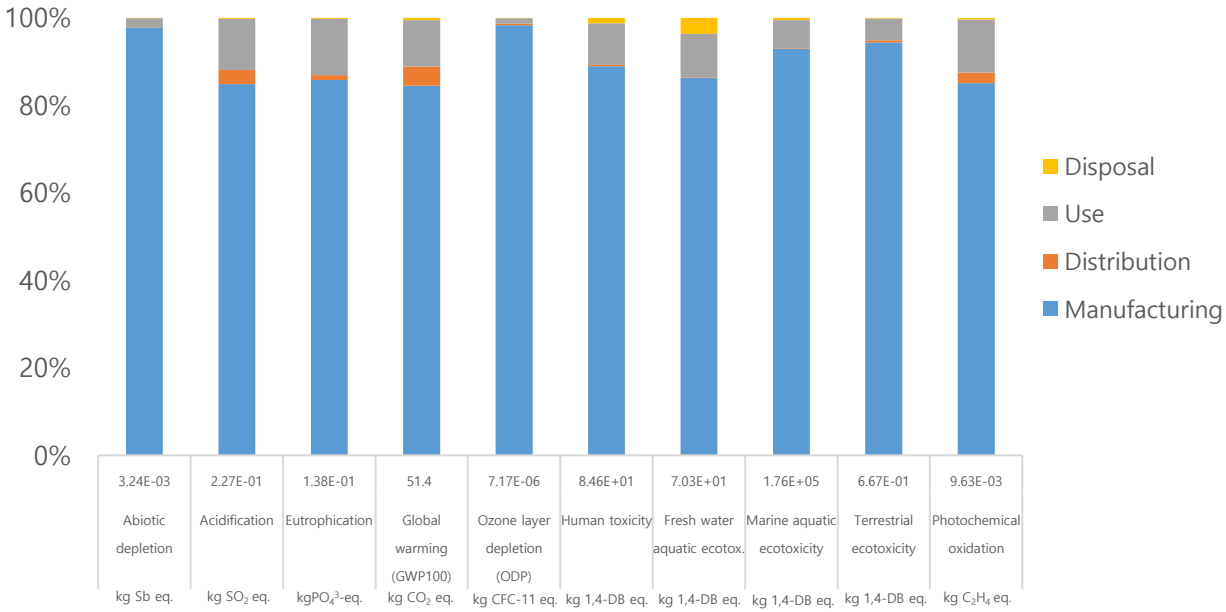
## Product Features

| | |
|---|---|
| Model name | SM-F731B(Galaxy Z Flip5) |
| Dimension | 165.1 x 71.9 x 6.9 mm |
| Display | OLED 6.7” / 3.4” |
| Weight | Product&Acc. : 206.99 g<br>Packages : 126.60 g |

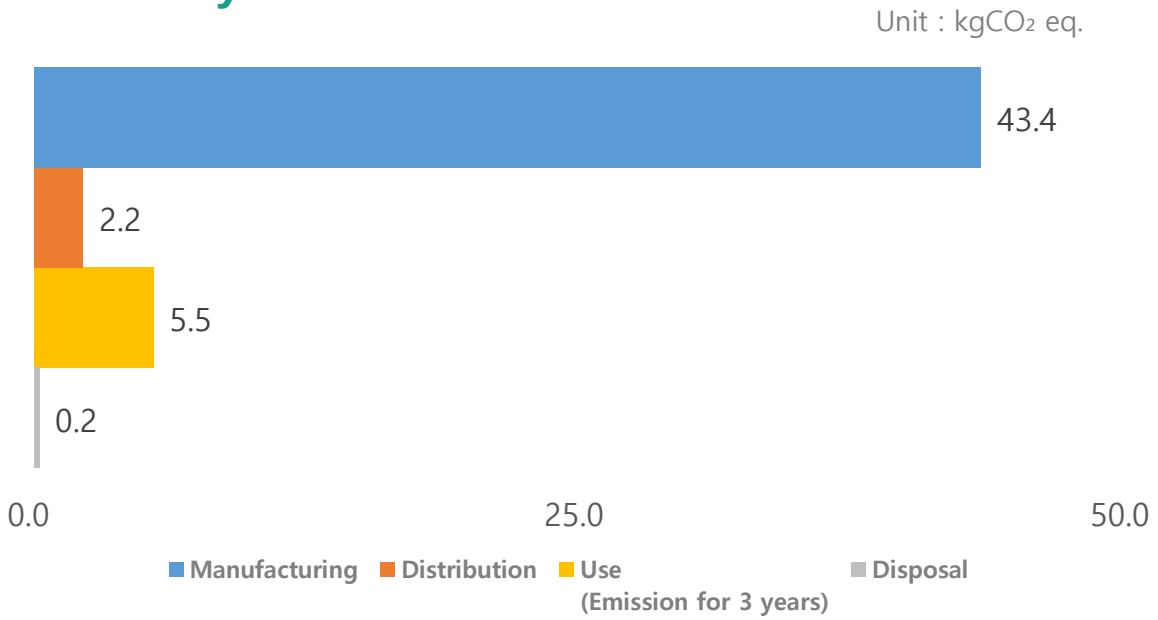
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Flip5

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

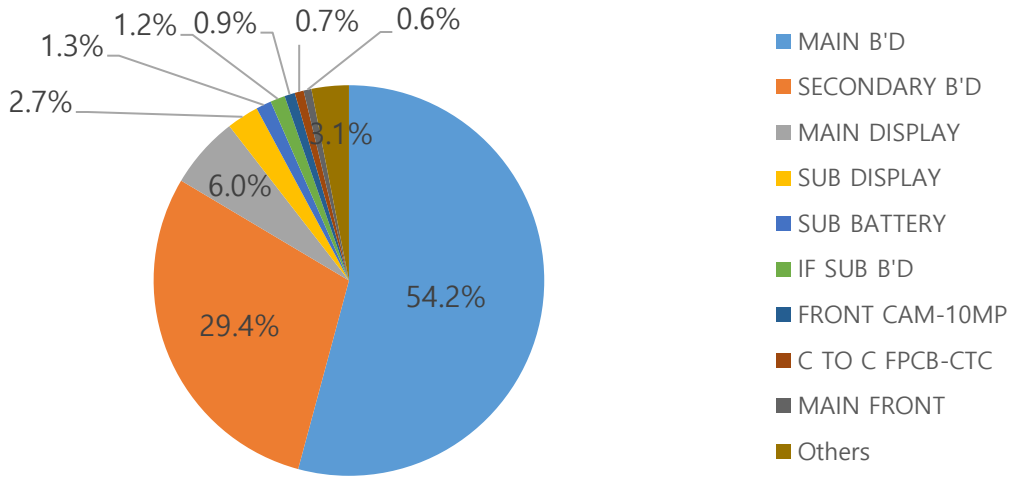
LCA Report Issuance Date : Sep 30, 2023

Webpage Publication Date of Summary of LCA : Sep 30, 2023

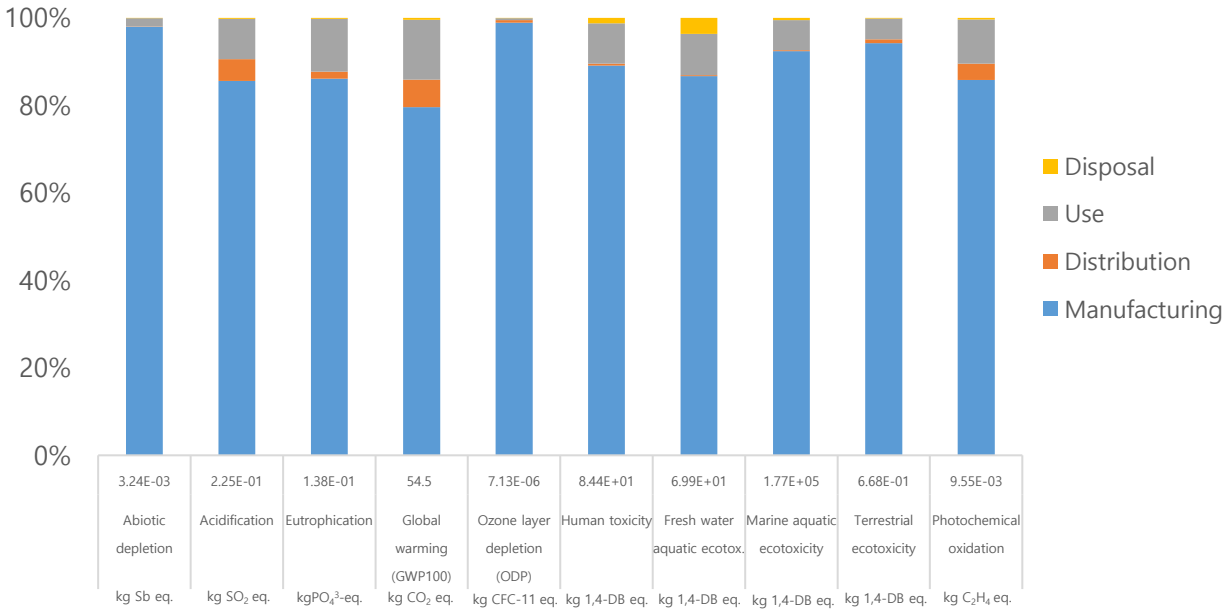
## Product Features

| | |
|---|---|
| Model name | SM-F731U(Galaxy Z Flip5) |
| Dimension | 165.1 x 71.9 x 6.9 mm |
| Display | OLED 6.7” / 3.4” |
| Weight | Product&Acc. : 206.99 g<br>Packages : 126.60 g |

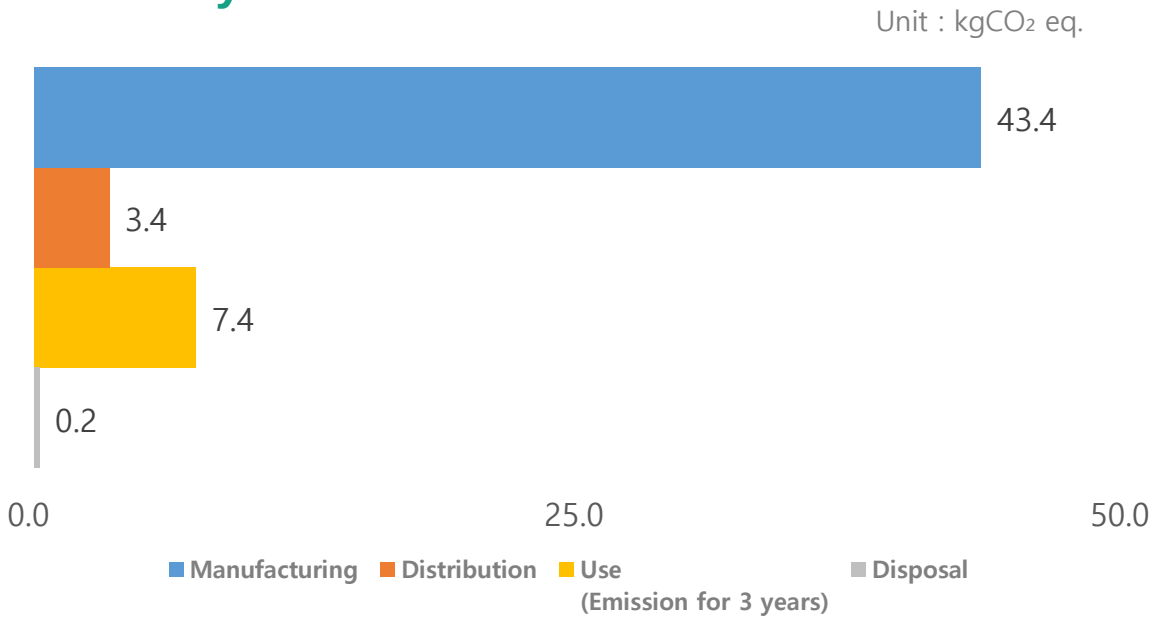
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Fold5

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

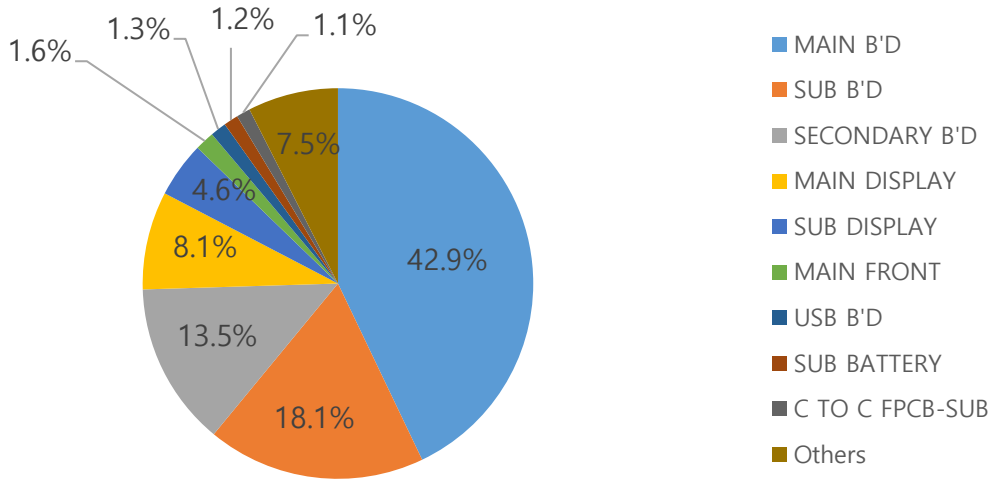
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

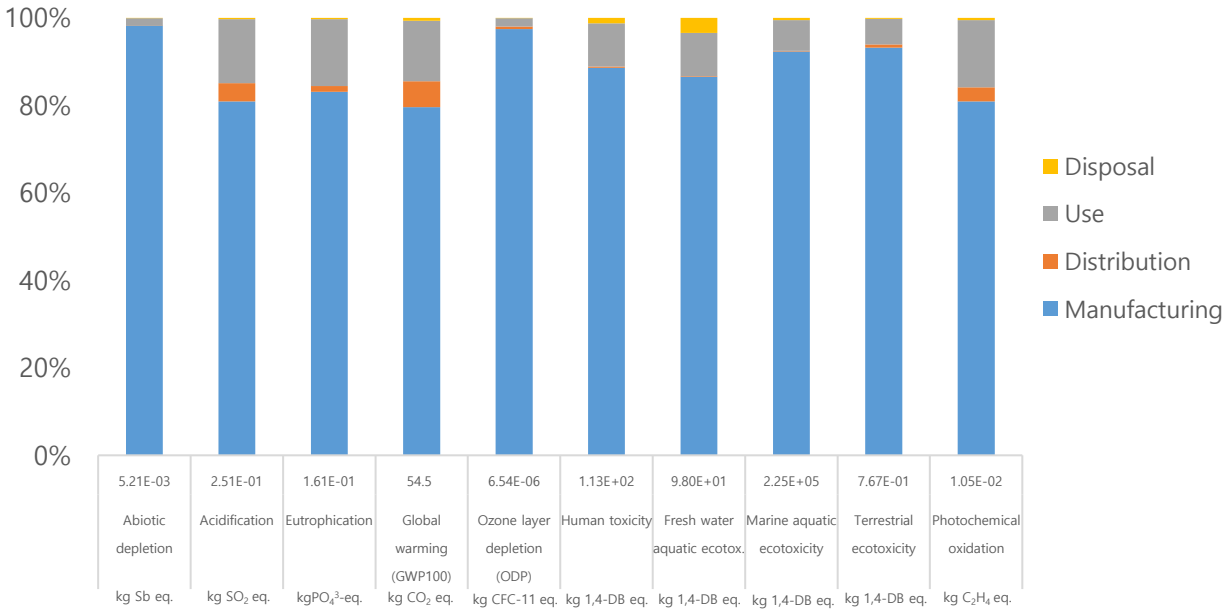
## Product Features

| | |
|---|---|
| **Model name** | SM-F946B(Galaxy Z Fold5) |
| **Dimension** | 154.9 x 129.9 x 6.1 mm |
| **Display** | OLED 7.6” / 6.2” |
| **Weight** | Product&Acc. : 272.99 g<br>Packages : 206.99 g |

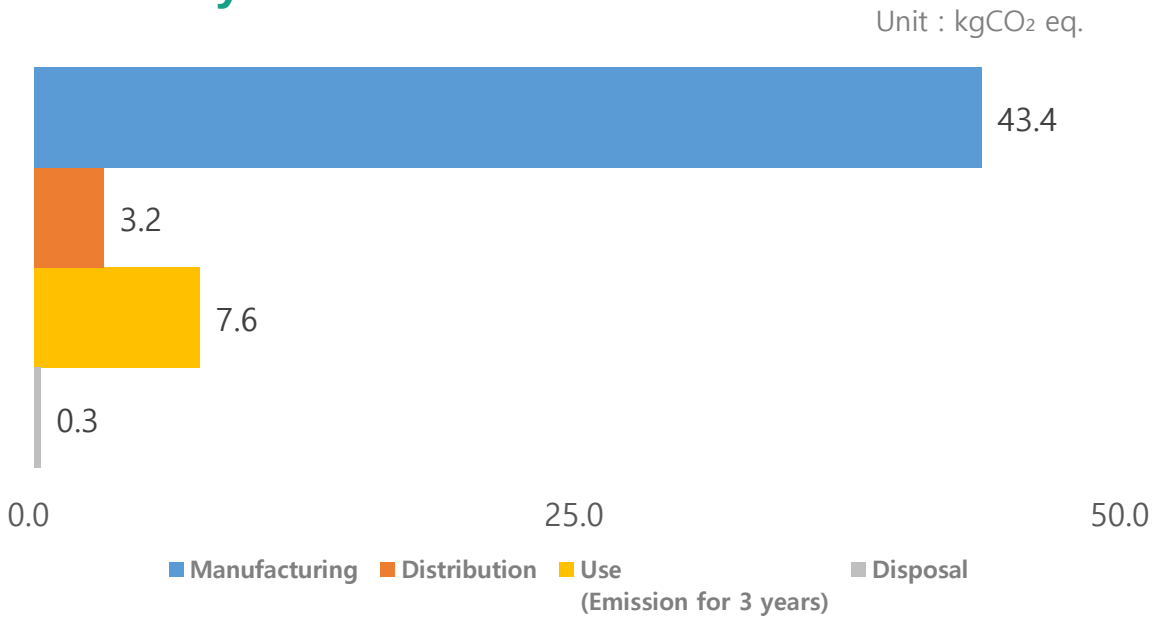
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Z Fold5

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.5.0.0 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.9.1 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.09 / the Netherlands, 1997 as provided in the SimaPro 9.5.0.0 LCA tool |
| **LCA software** | SimaPro 9.5.0.0 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

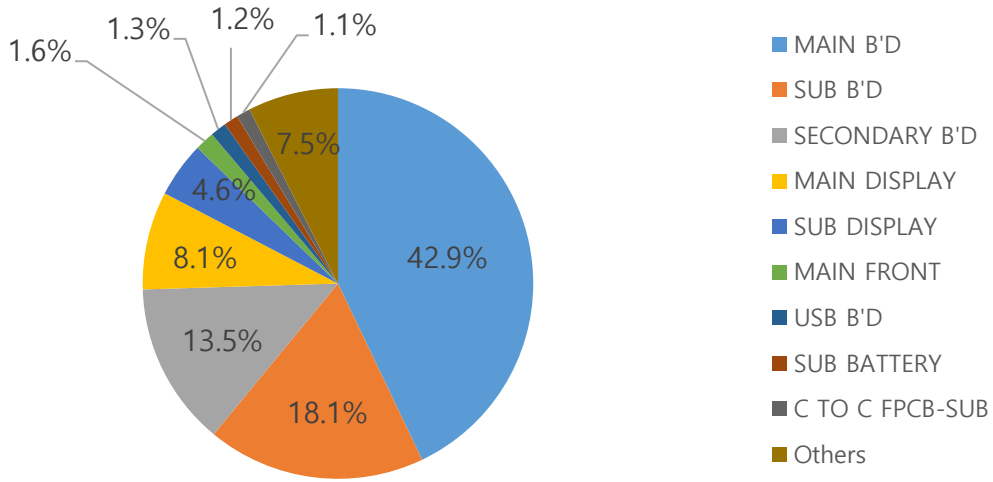
LCA Report Issuance Date : Sep 30, 2023

Webpage Publication Date of Summary of LCA : Sep 30, 2023

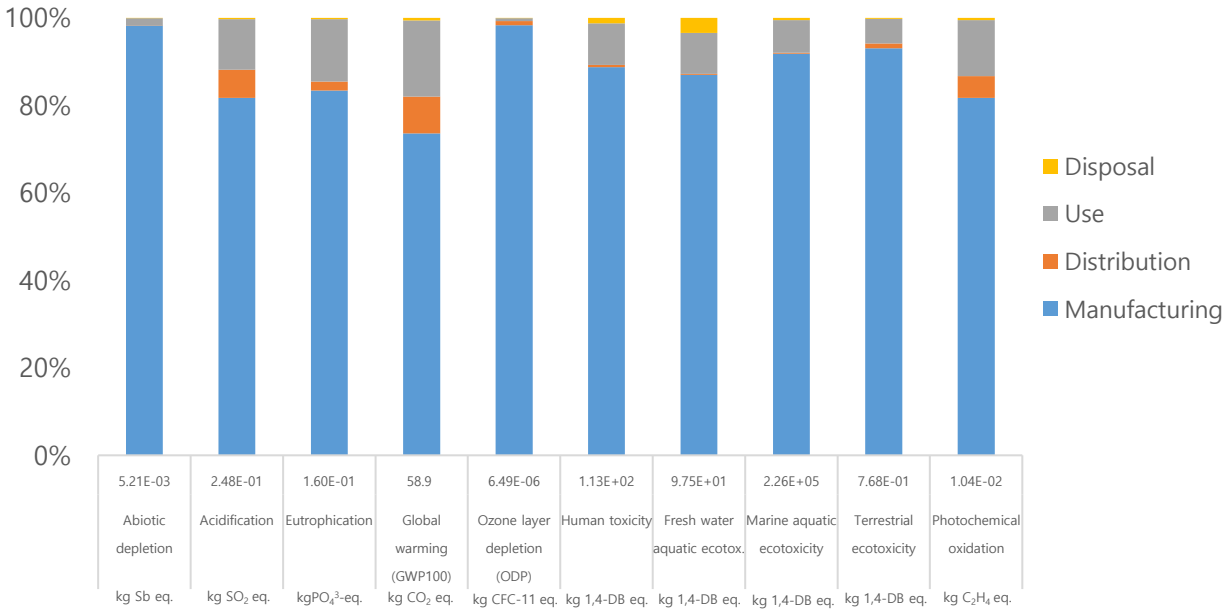
## Product Features

| | |
|---|---|
| Model name | SM-F946U(Galaxy Z Fold5) |
| Dimension | 154.9 x 129.9 x 6.1 mm |
| Display | OLED 7.6” / 6.2” |
| Weight | Product&Acc. : 272.99 g<br>Packages : 206.99 g |

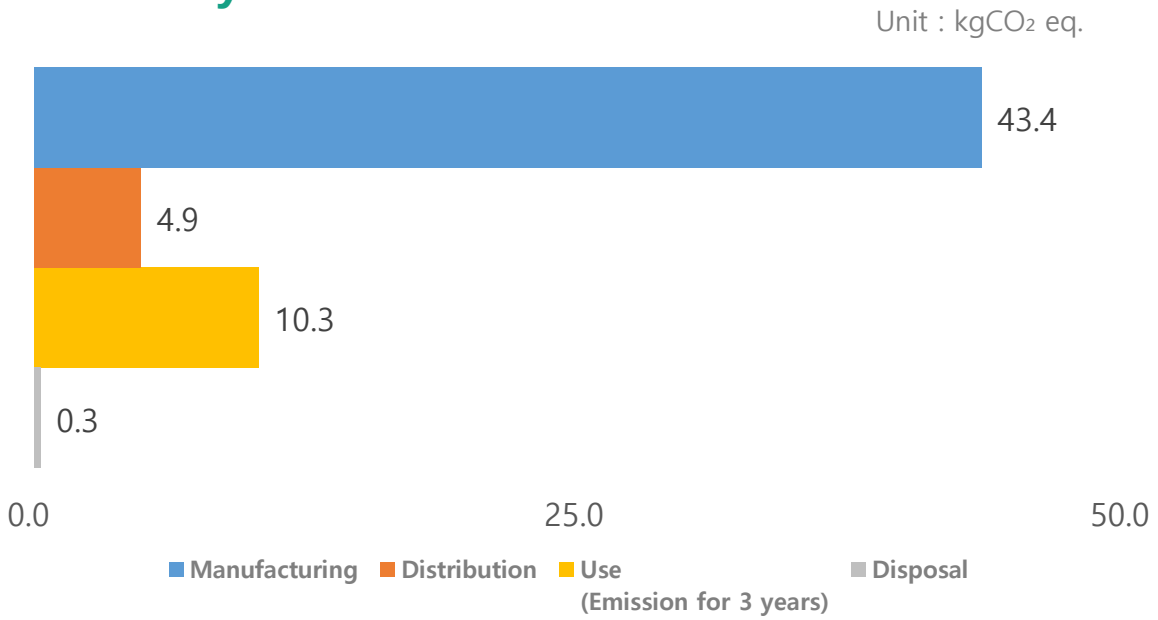
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M54 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

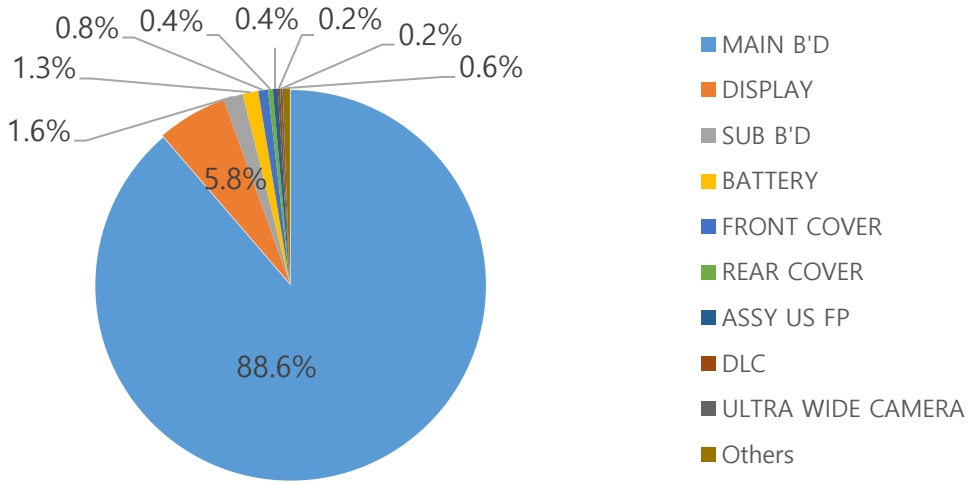
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to UAE |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

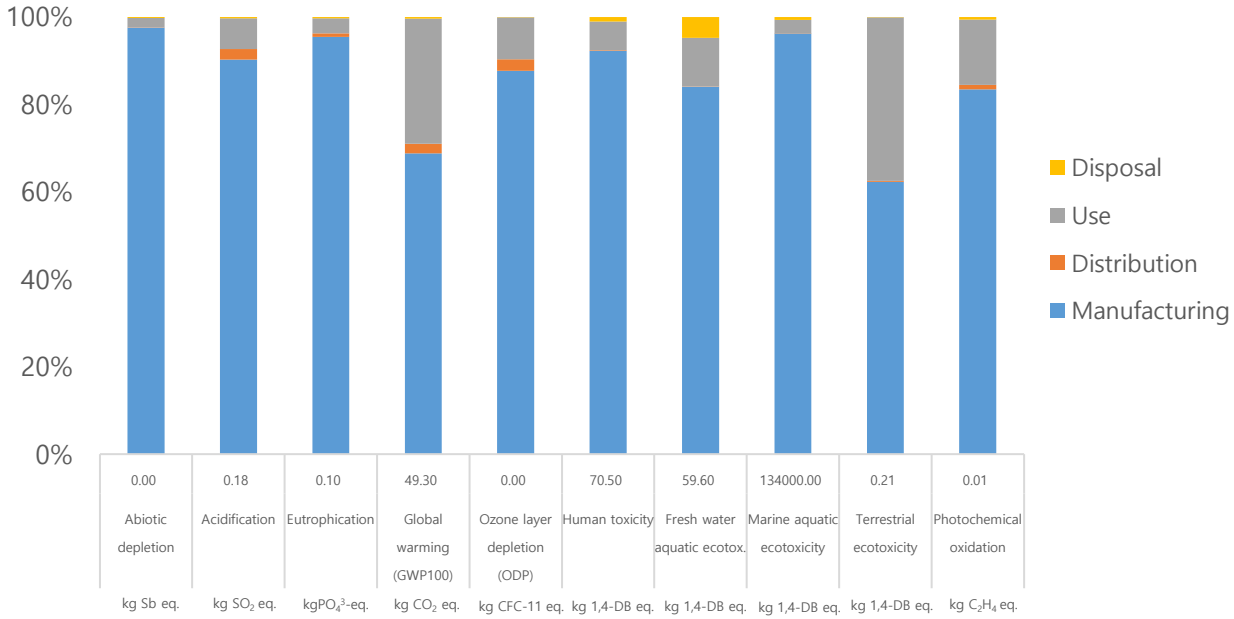
## Product Features

| | |
|---|---|
| Model name | SM-M546B(Galaxy M54 5G) |
| Dimension | 164.9 x 77.3 x 8.4 mm |
| Display | OLED 6.7” |
| Weight | Product&Acc. : 220.18 g<br>Packages : 111.33 g |

## Global Warming Impact Profile

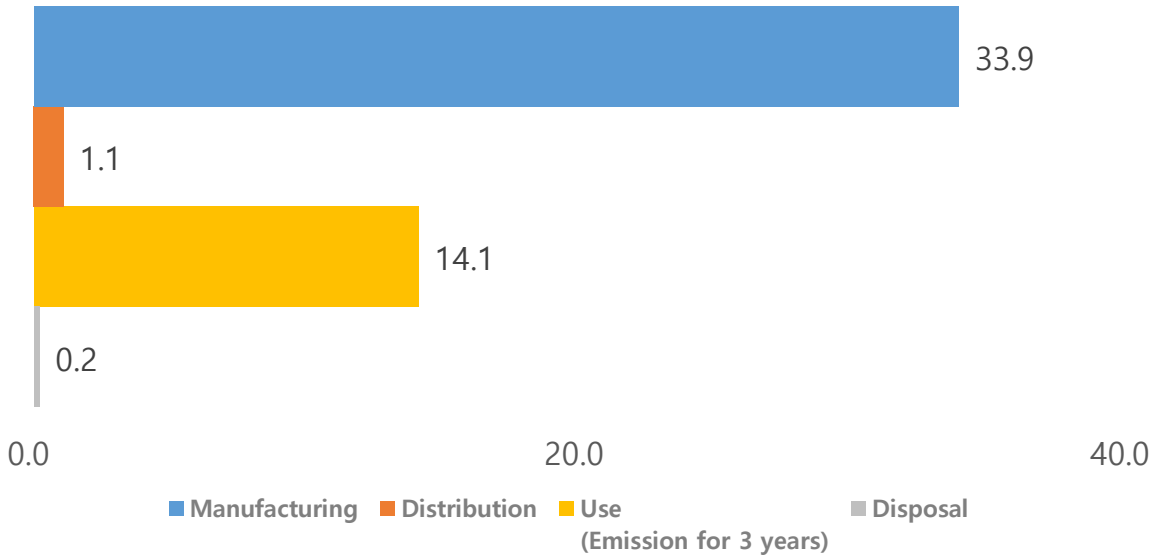



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy M14 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

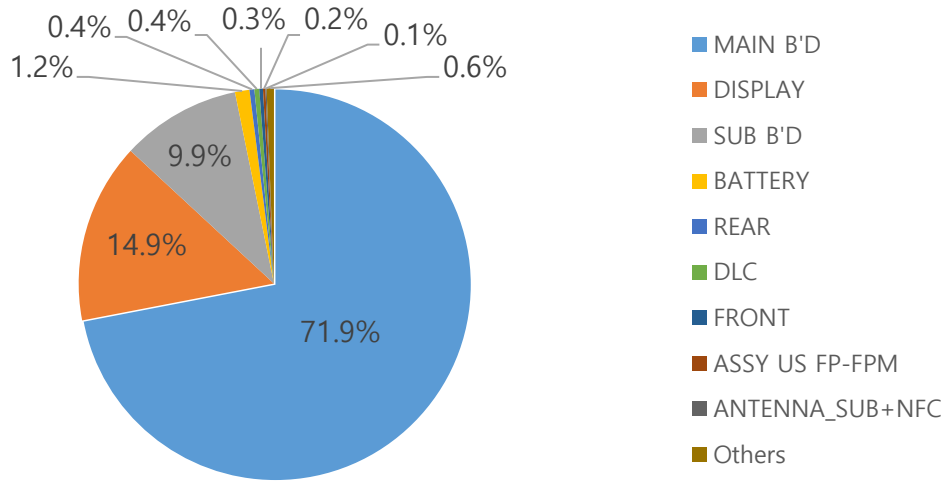
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to UAE |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

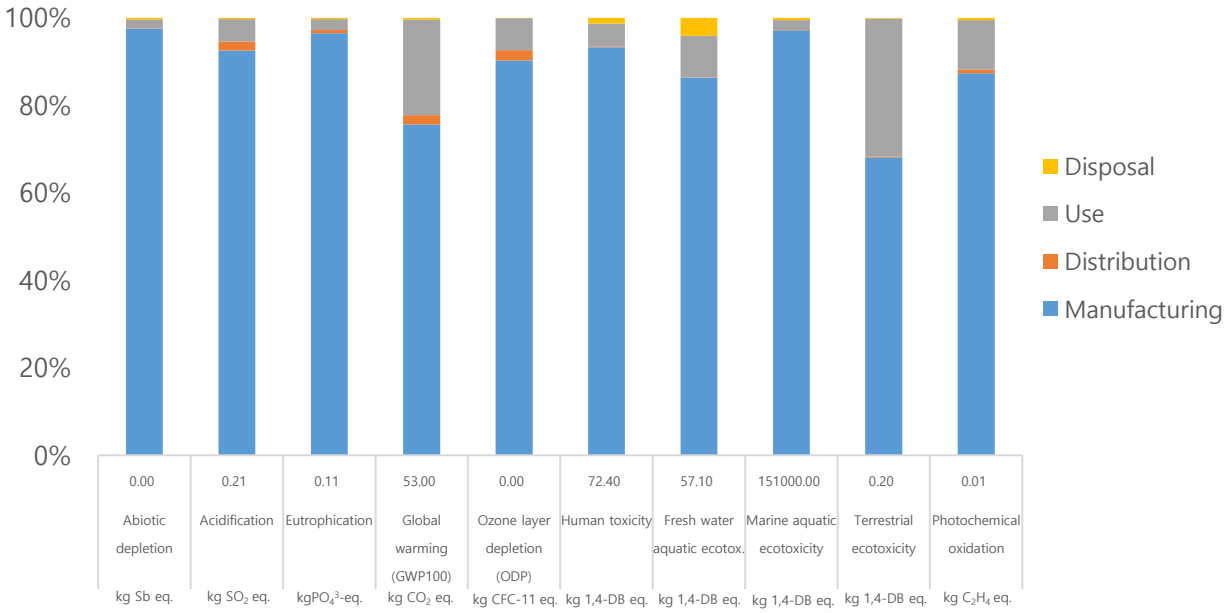
## Product Features

| | |
|---|---|
| Model name | SM-M146B(Galaxy M14 5G) |
| Dimension | 166.8 x 77.2 x 9.4 mm |
| Display | OLED 6.6” |
| Weight | Product&Acc. : 226.52 g<br>Packages : 71.85 g |

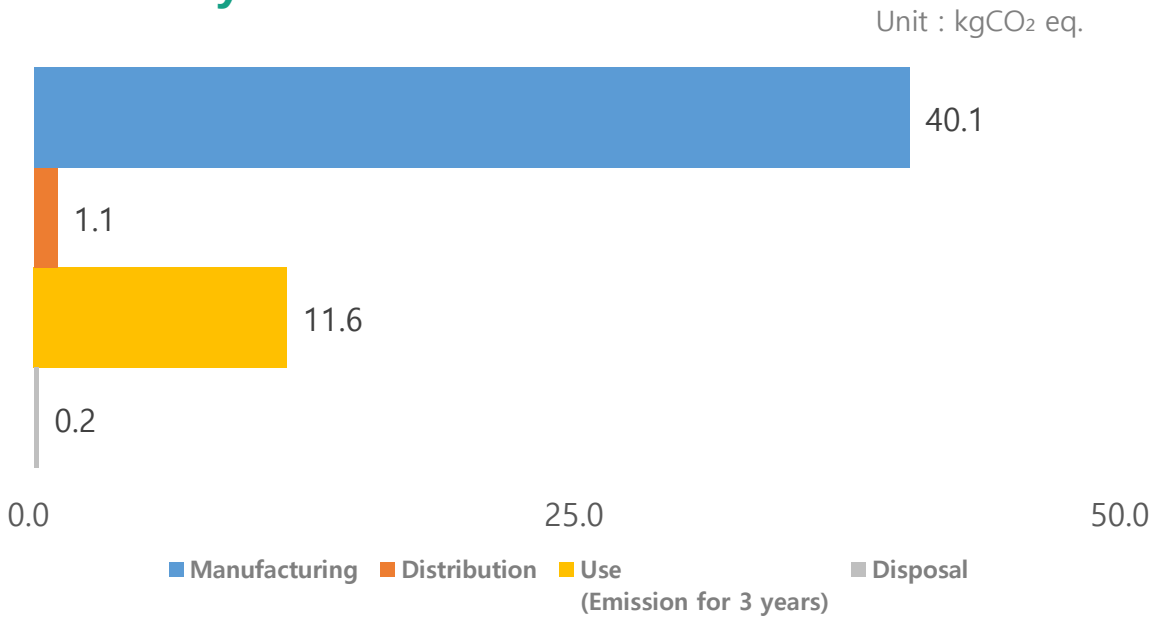
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A54 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

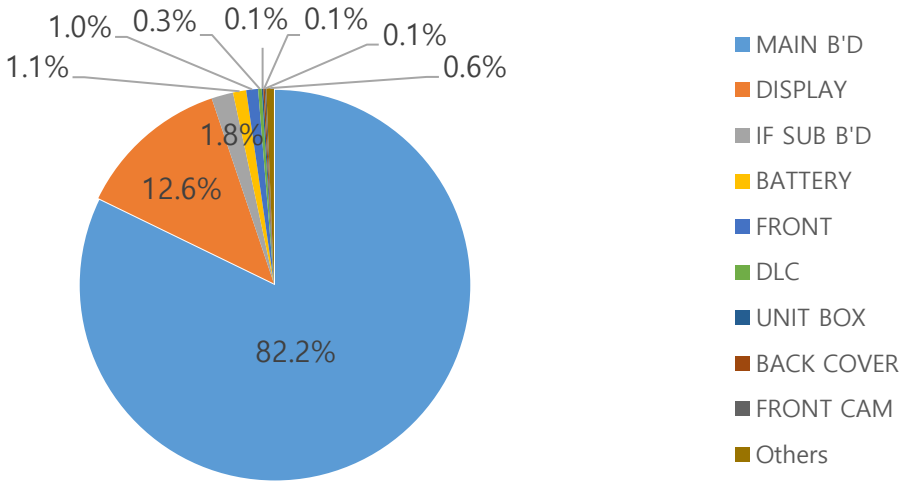
LCA Report Issuance Date : Mar 30, 2023

Webpage Publication Date of Summary of LCA : Mar 30, 2023

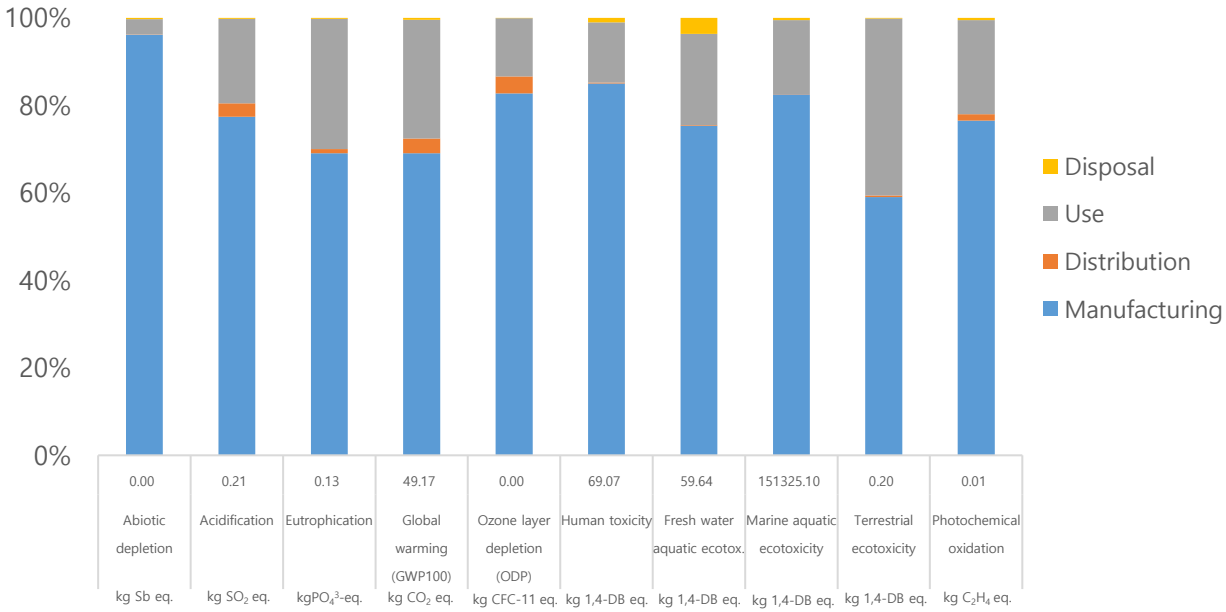
## Product Features

| | |
|---|---|
| **Model name** | SM-A546U(Galaxy A54 5G) |
| **Dimension** | 158.2 x 76.7 x 8.2 mm |
| **Display** | OLED 6.4” |
| **Weight** | Product&Acc. : 223.42 g<br>Packages : 108.72 g |

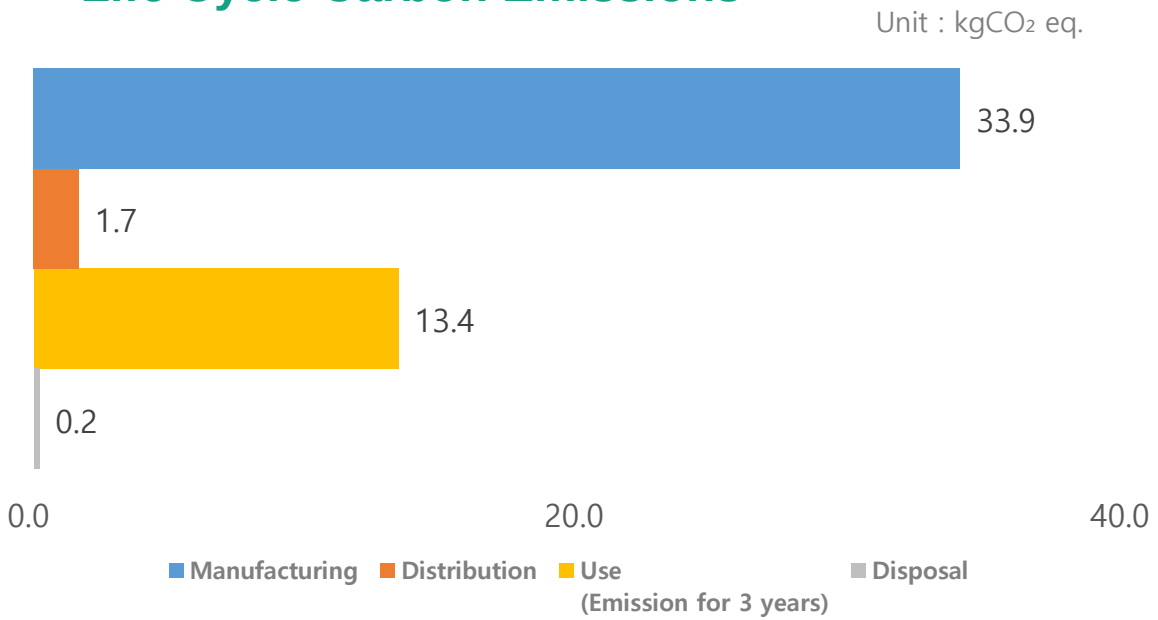
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A54 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

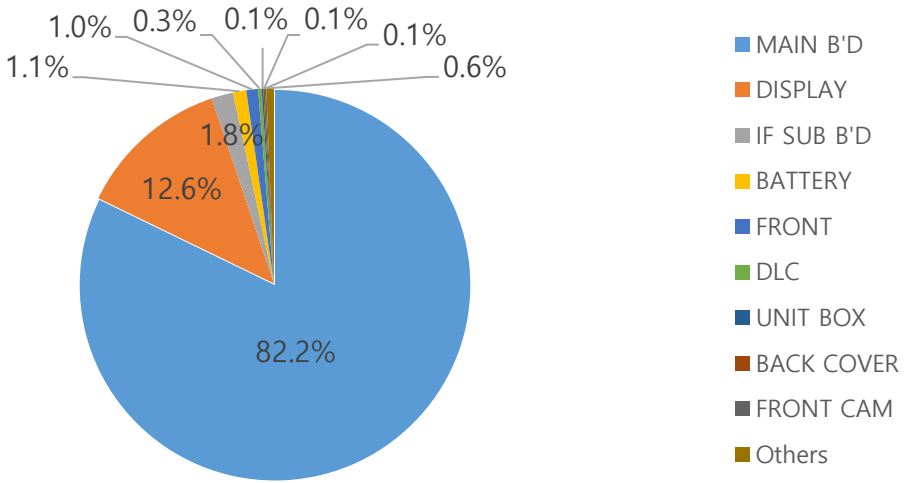
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

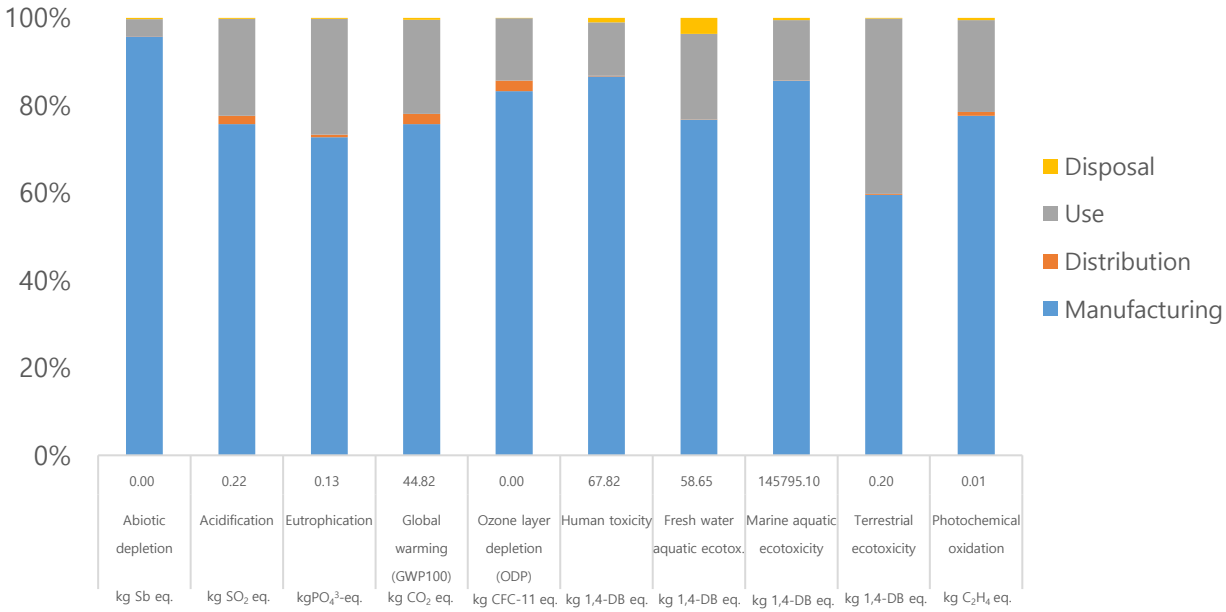
## Product Features

| | |
|---|---|
| **Model name** | SM-A546B(Galaxy A54 5G) |
| **Dimension** | 158.2 x 76.7 x 8.2 mm |
| **Display** | OLED 6.4” |
| **Weight** | Product&Acc. : 223.42 g<br>Packages : 108.72 g |

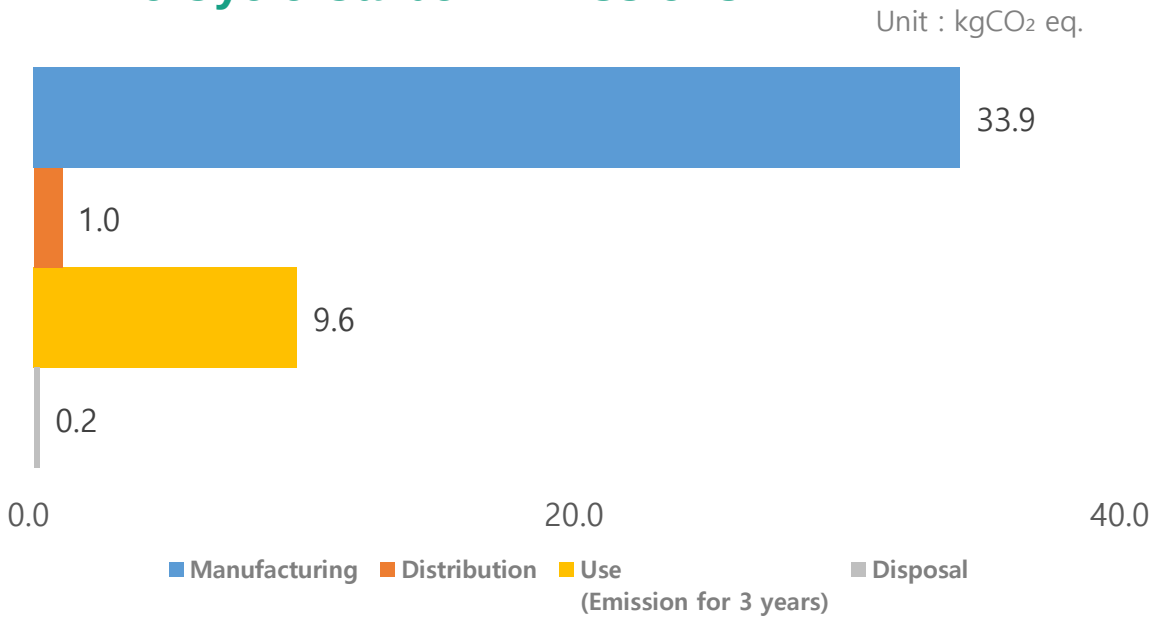
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A34 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

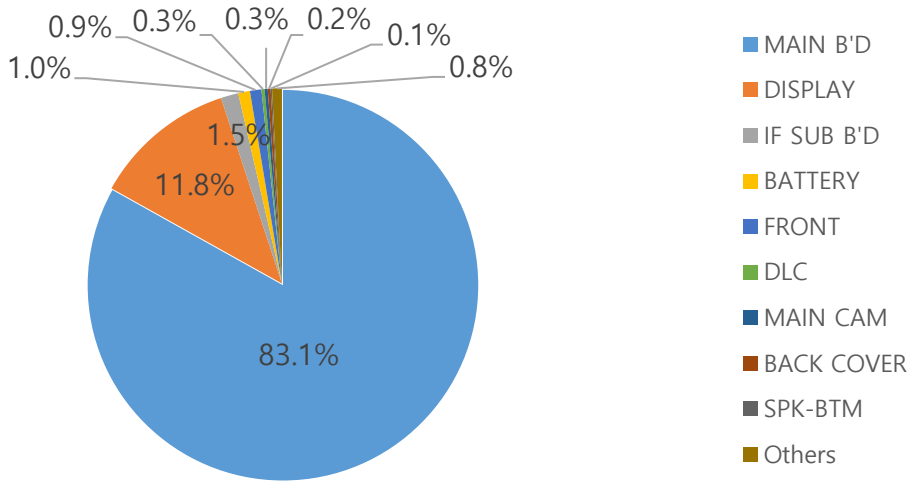
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

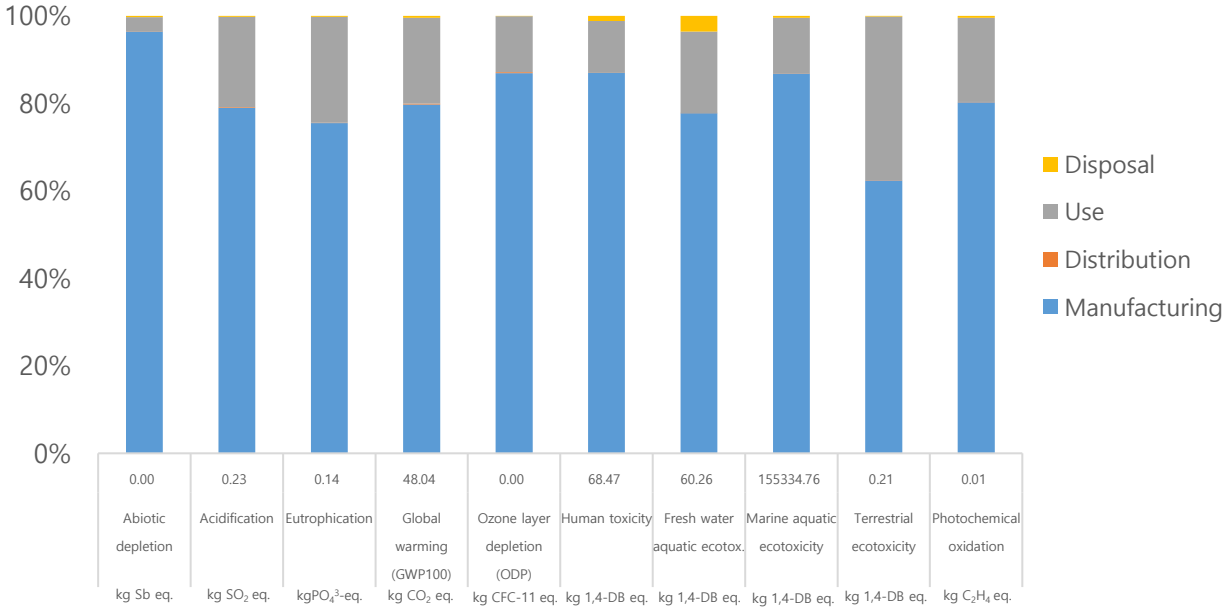
## Product Features

| | |
|---|---|
| **Model name** | SM-A346B(Galaxy A34 5G) |
| **Dimension** | 161.3 x 78.1 x 8.2 mm |
| **Display** | OLED 6.6” |
| **Weight** | Product&Acc. : 220.42 g<br>Packages : 106.95 g |

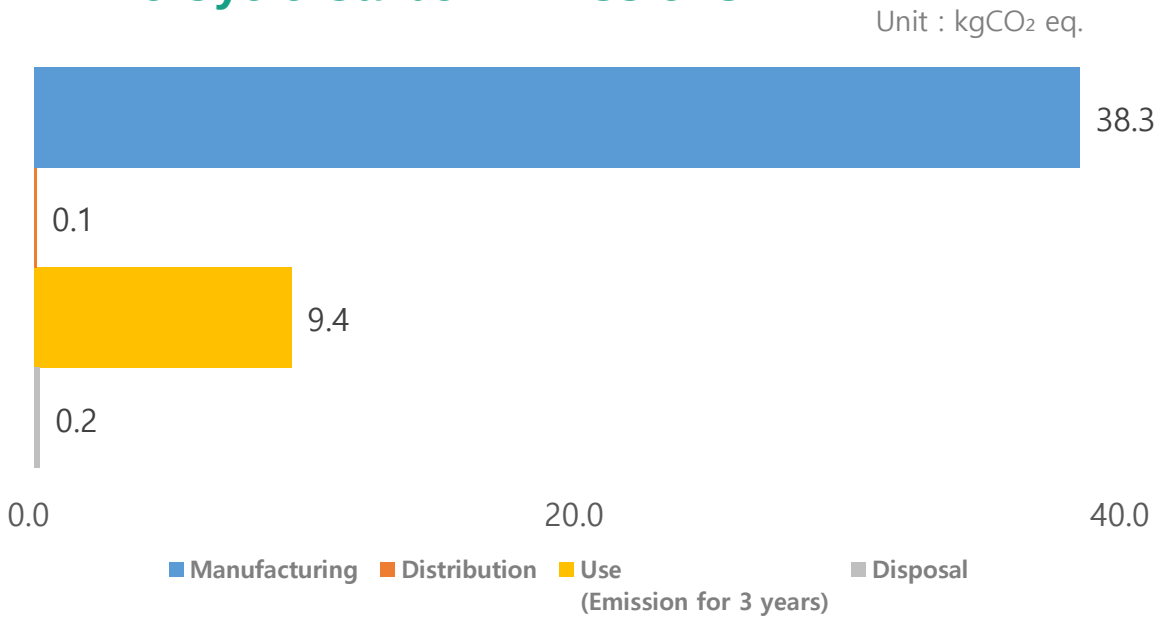
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A24

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.4.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML-IA baseline V3.06 / the Netherlands, 1997 as provided in the SimaPro 9.4.0.3 LCA tool |
| **LCA software** | SimaPro 9.4.0.3 |

## System boundary of LCA

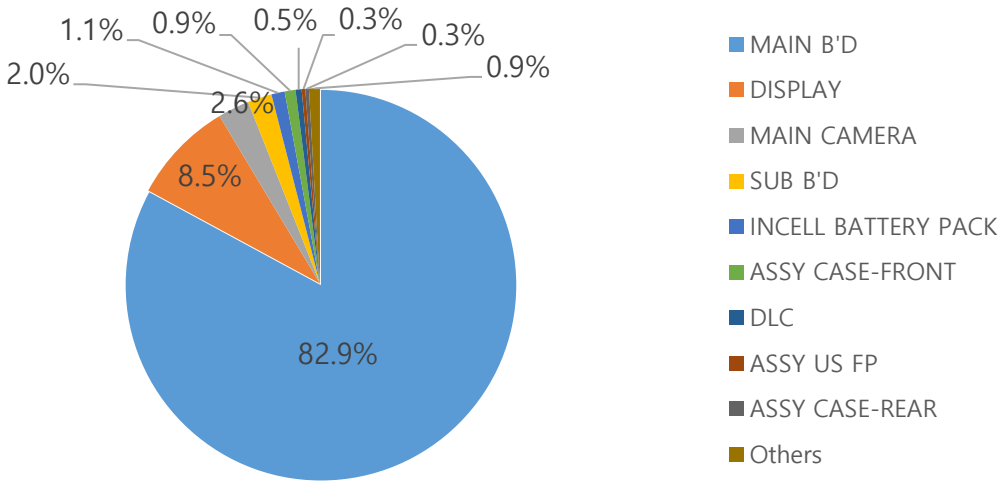
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to UAE |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

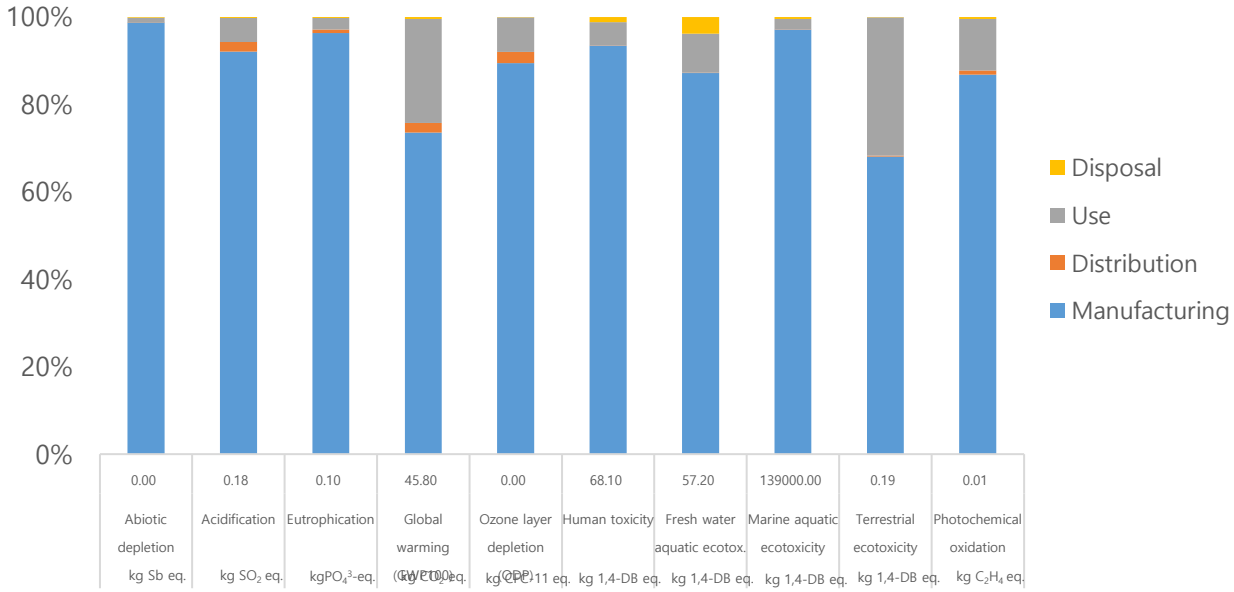
## Product Features

| | |
|---|---|
| Model name | SM-A245F(Galaxy A24) |
| Dimension | 162.1 x 77.6 x 8.3 mm |
| Display | OLED 6.5” |
| Weight | Product&Acc. : 217.06 g<br>Packages : 66.84 g |

## Global Warming Impact Profile

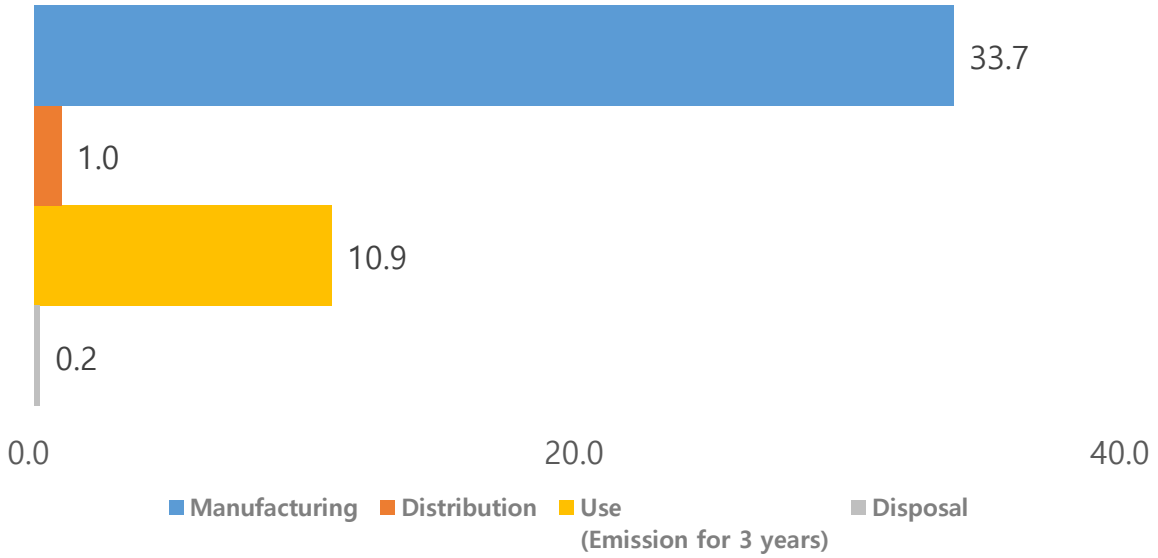



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A14

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

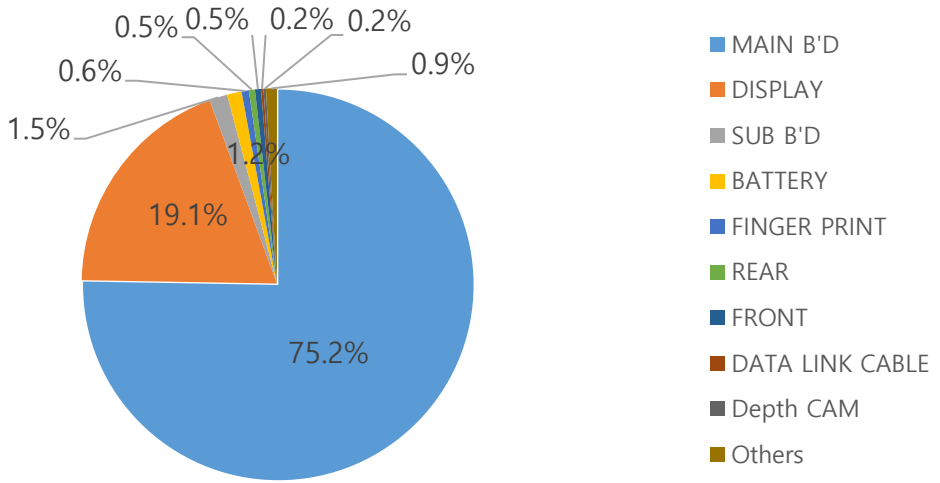
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

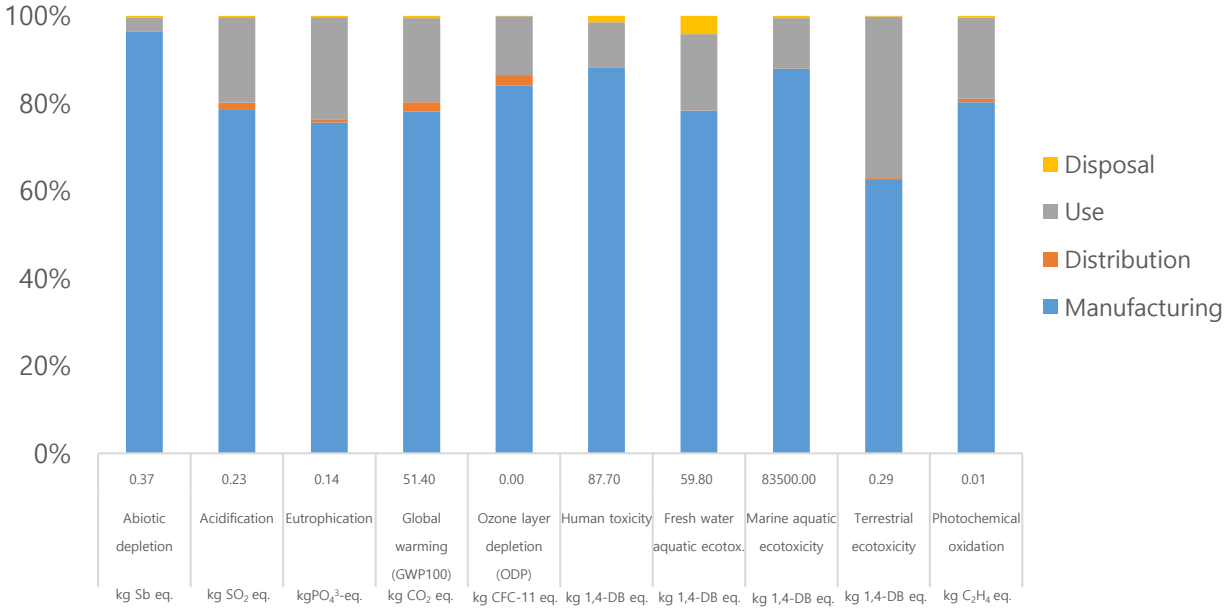
## Product Features

| | |
|---|---|
| **Model name** | SM-A145F(Galaxy A14) |
| **Dimension** | 167.7 x 78 x 9.1 mm |
| **Display** | LCD 6.6" |
| **Weight** | Product&Acc. : 221.87 g<br>Packages : 66.23 g |

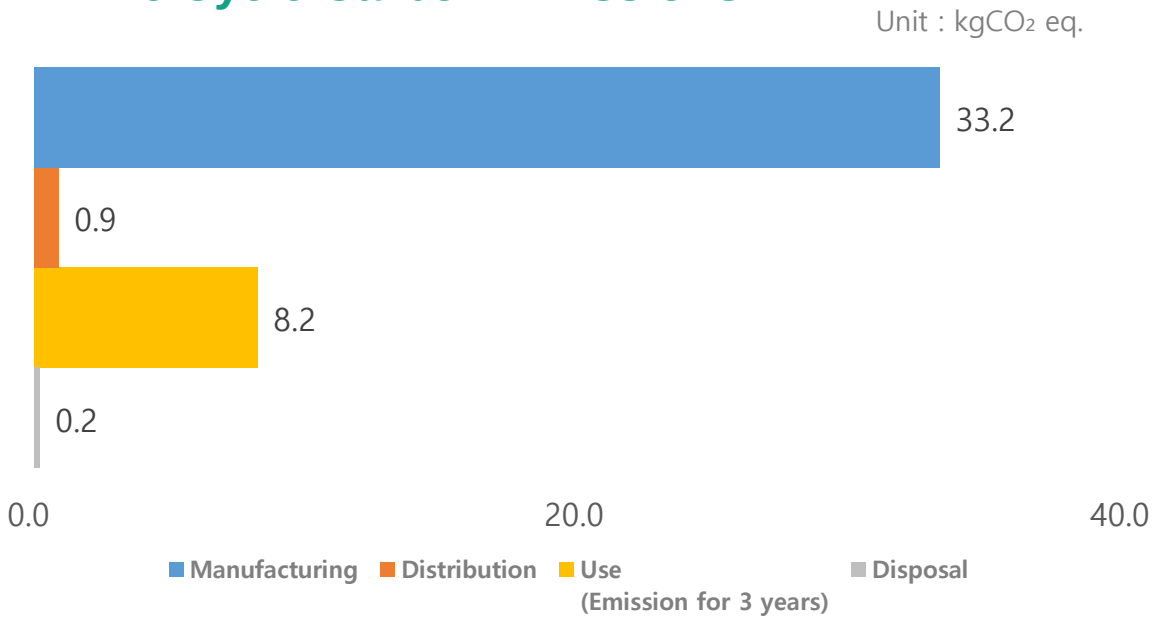
## Global Warming Impact Profile




## Characterized Environment Impact




## Life Cycle Carbon Emissions




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A23 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

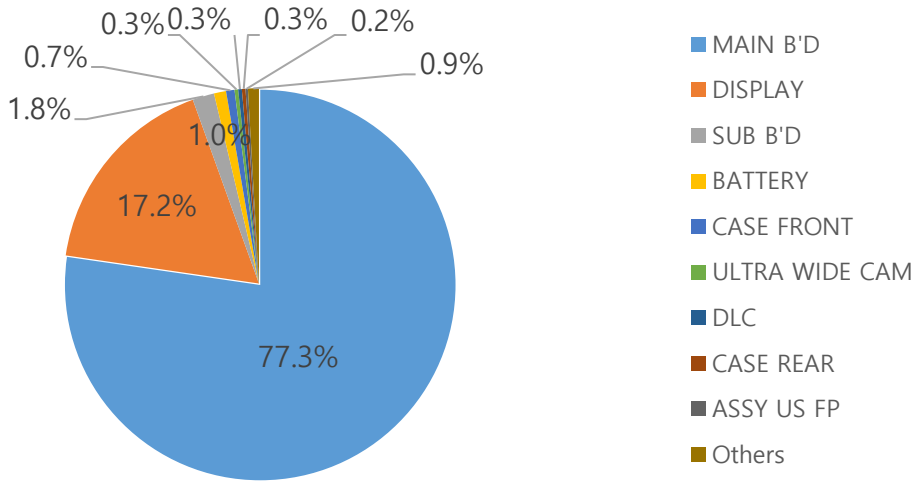
LCA Report Issuance Date : Nov 30, 2022

Webpage Publication Date of Summary of LCA : Nov 30, 2022

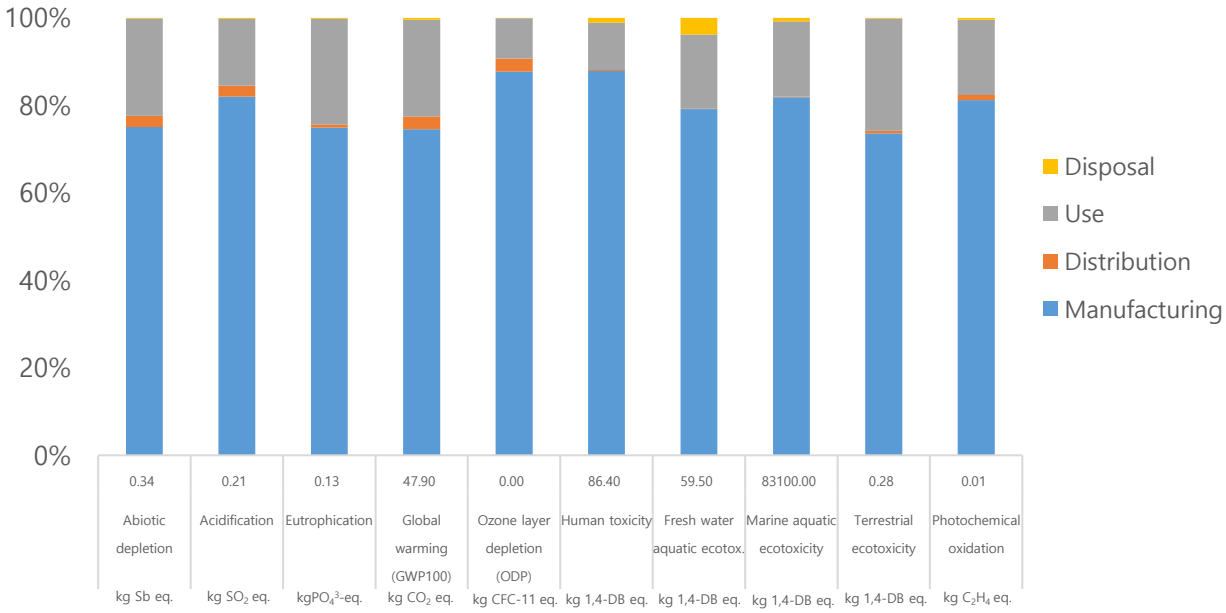
## Product Features

| | |
|---|---|
| **Model name** | SM-A236V(Galaxy A23 5G) |
| **Dimension** | 165.4 x 76.9 x 8.4 mm |
| **Display** | LCD 6.6” |
| **Weight** | Product&Acc. : 216.19 g<br>Packages : 55.69 g |

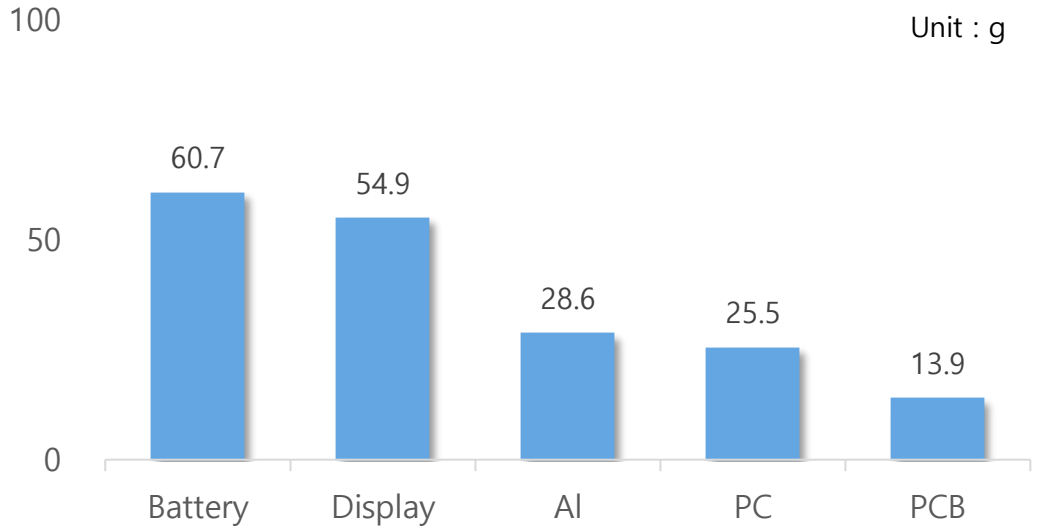
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

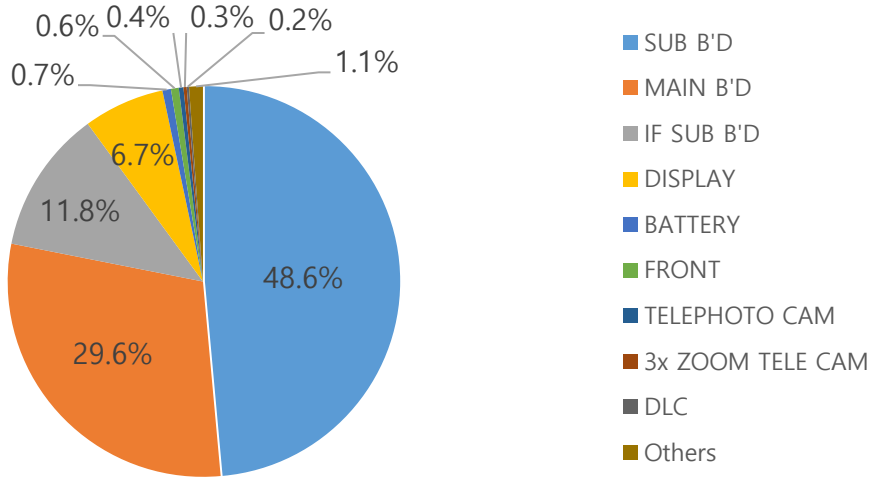
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

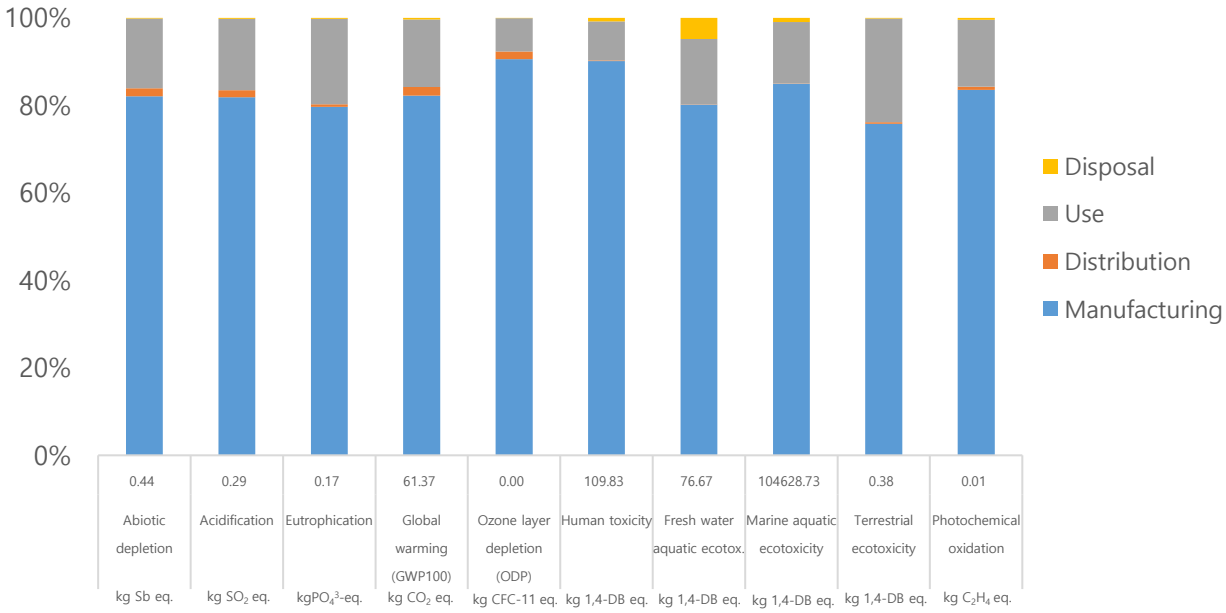
## Product Features

| | |
|---|---|
| **Model name** | SM-S918B(Galaxy S23 Ultra) |
| **Dimension** | 163.4 x 78.1 x 8.9 mm |
| **Display** | OLED 6.8” |
| **Weight** | Product&Acc. : 253.99 g<br>Packages : 128.15 g |

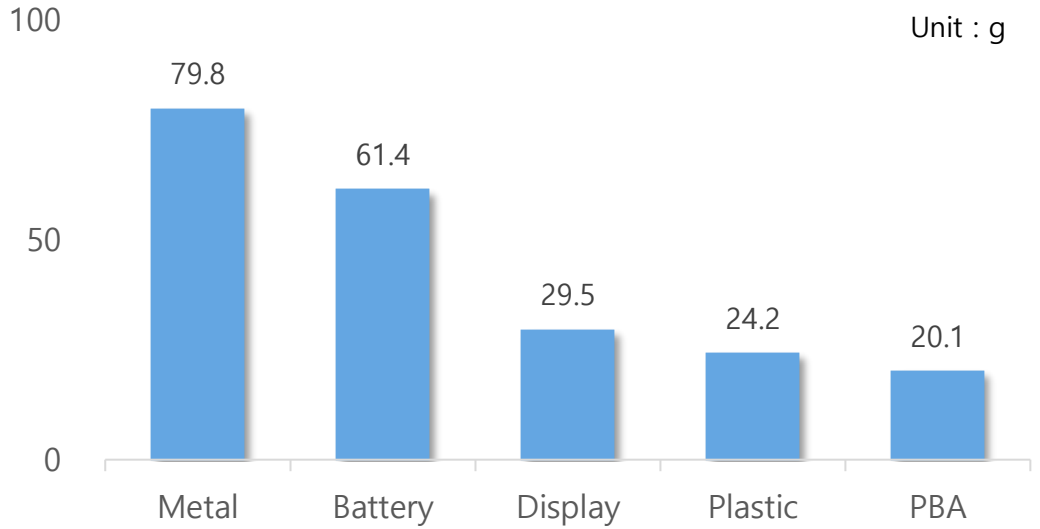
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

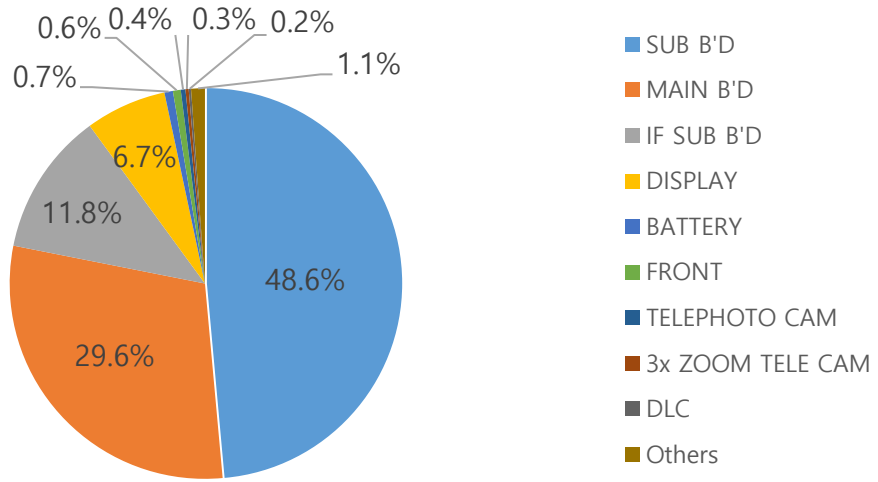
LCA Report Issuance Date : Feb 28, 2023

Webpage Publication Date of Summary of LCA : Feb 28, 2023

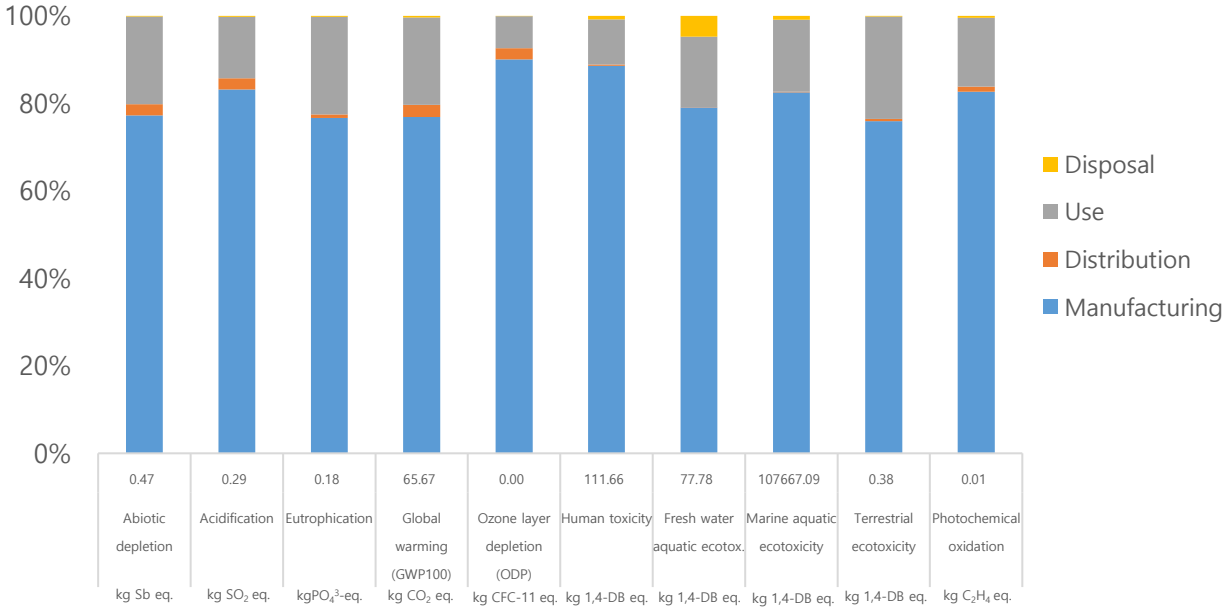
## Product Features

| | |
|---|---|
| Model name | SM-S918U(Galaxy S23 Ultra) |
| Dimension | 163.4 x 78.1 x 8.9 mm |
| Display | OLED 6.8” |
| Weight | Product&Acc. : 253.99 g<br>Packages : 128.15 g |

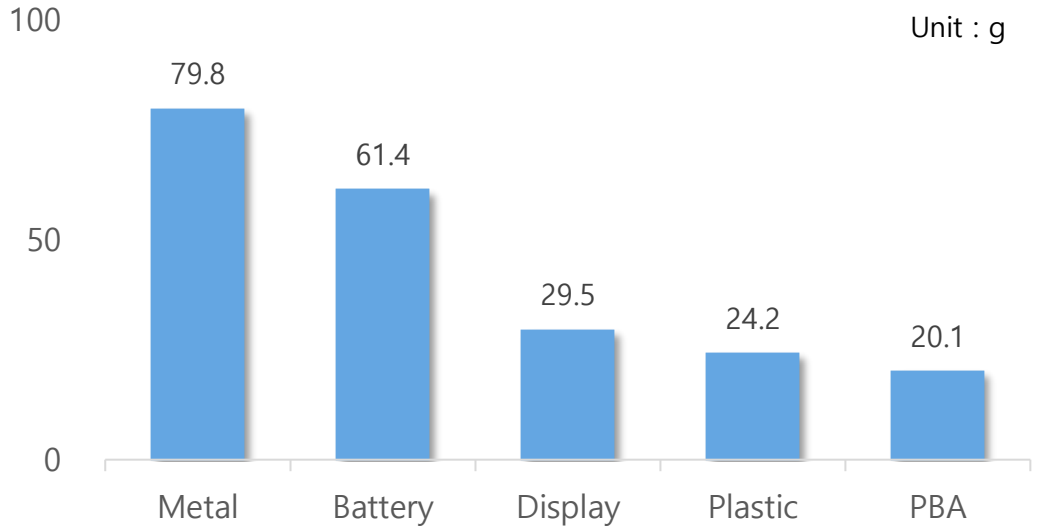
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23+

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

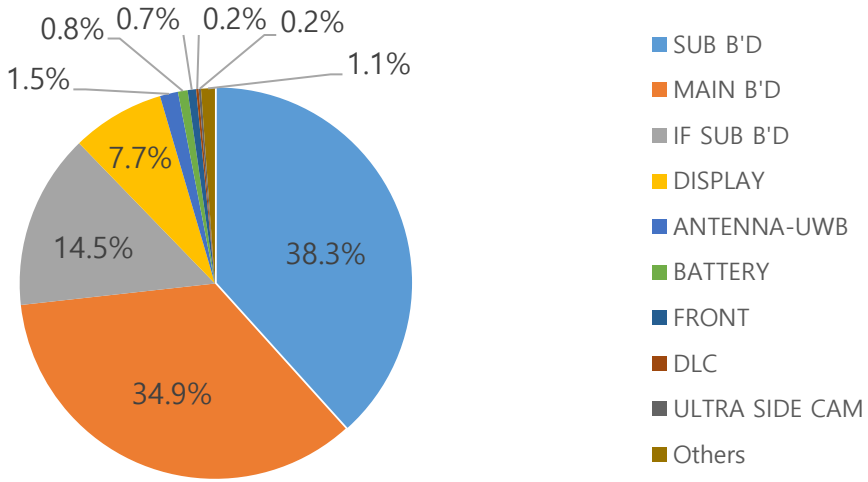
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

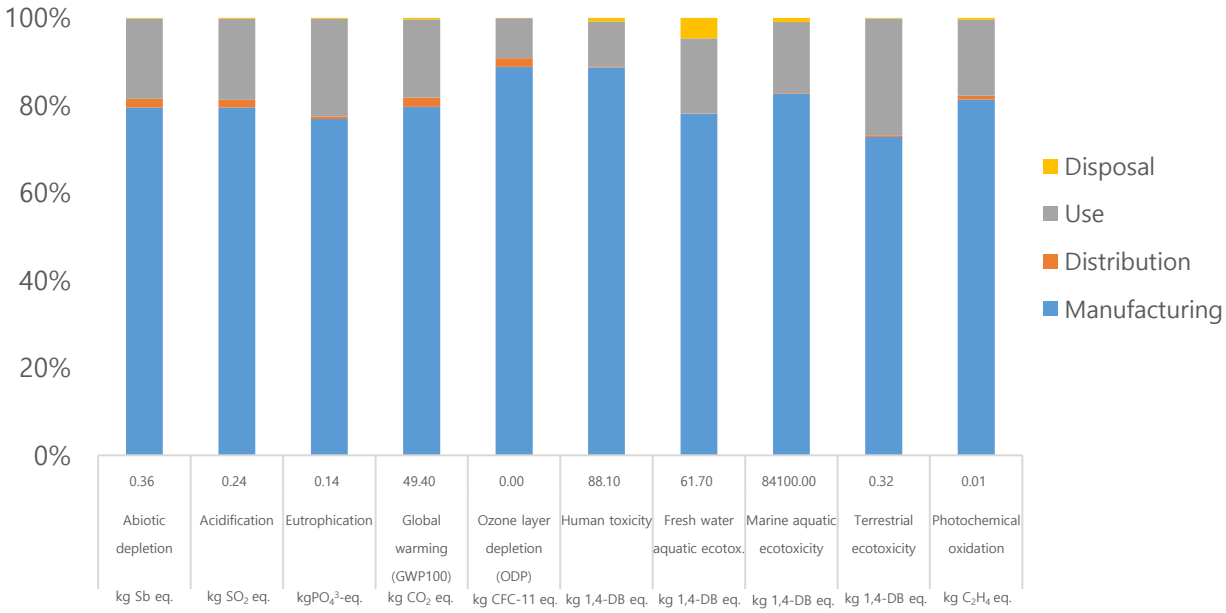
## Product Features

| | |
|---|---|
| Model name | SM-S916B(Galaxy S23+) |
| Dimension | 157.8 x 76.2 x 7.6 mm |
| Display | OLED 6.6” |
| Weight | Product&Acc. : 206.16 g<br>Packages : 123.99 g |

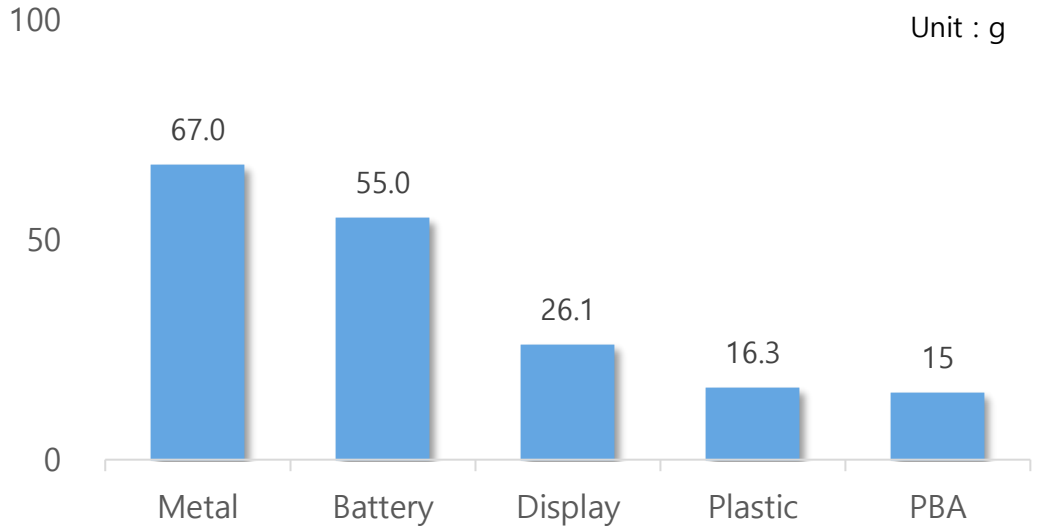
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23+

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

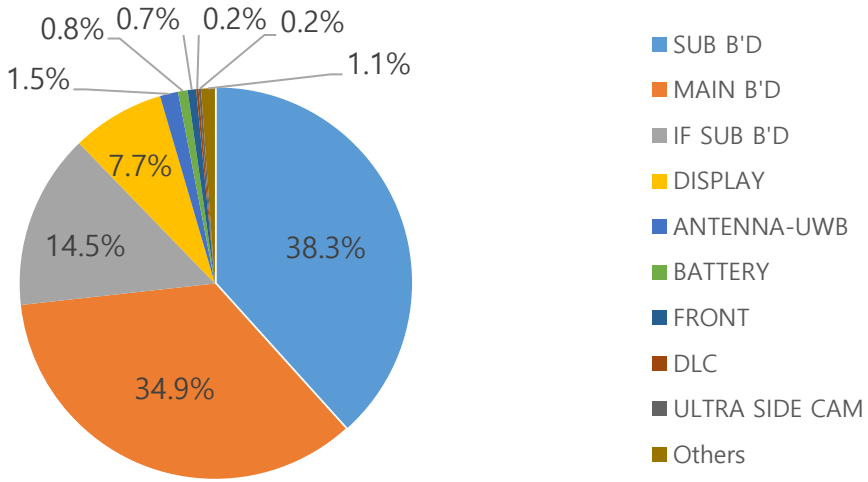
LCA Report Issuance Date : Feb 28, 2023

Webpage Publication Date of Summary of LCA : Feb 28, 2023

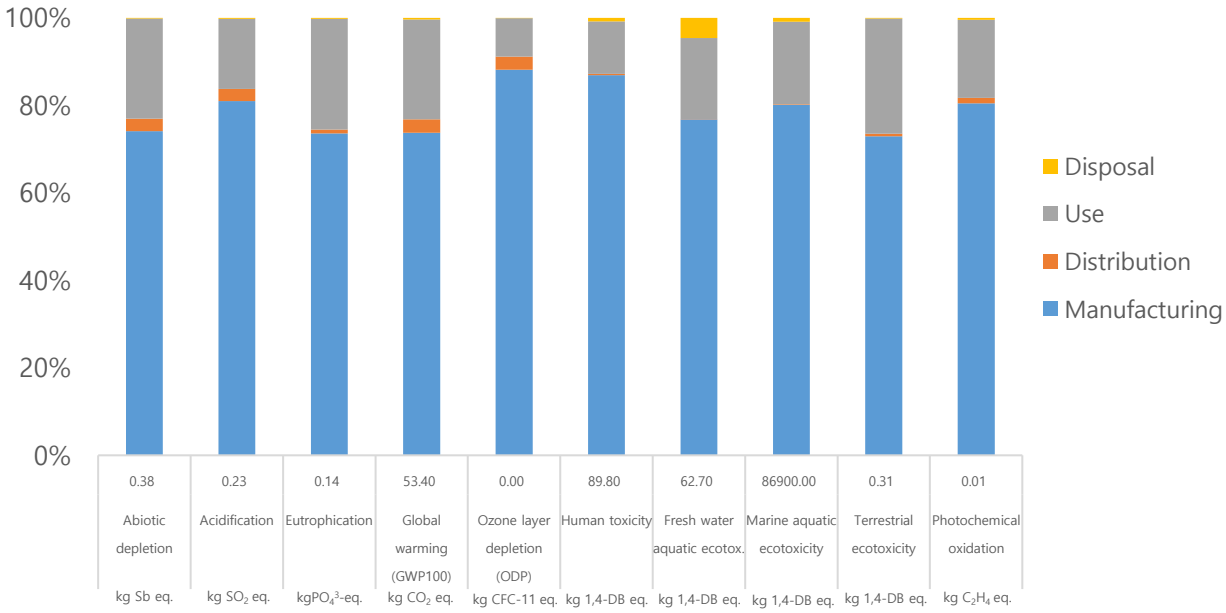
## Product Features

| | |
|---|---|
| Model name | SM-S916U(Galaxy S23+) |
| Dimension | 157.8 x 76.2 x 7.6 mm |
| Display | OLED 6.6” |
| Weight | Product&Acc. : 206.16 g<br>Packages : 123.99 g |

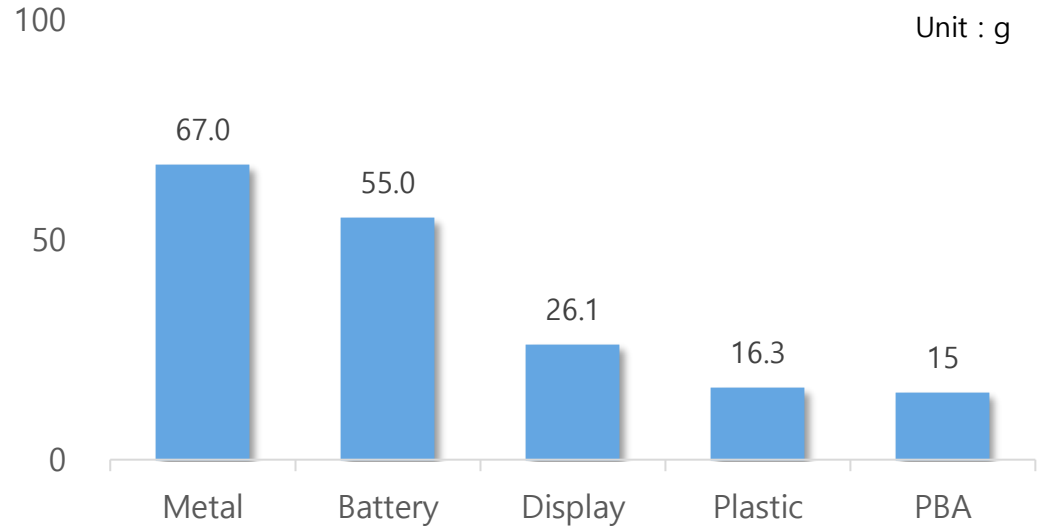
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

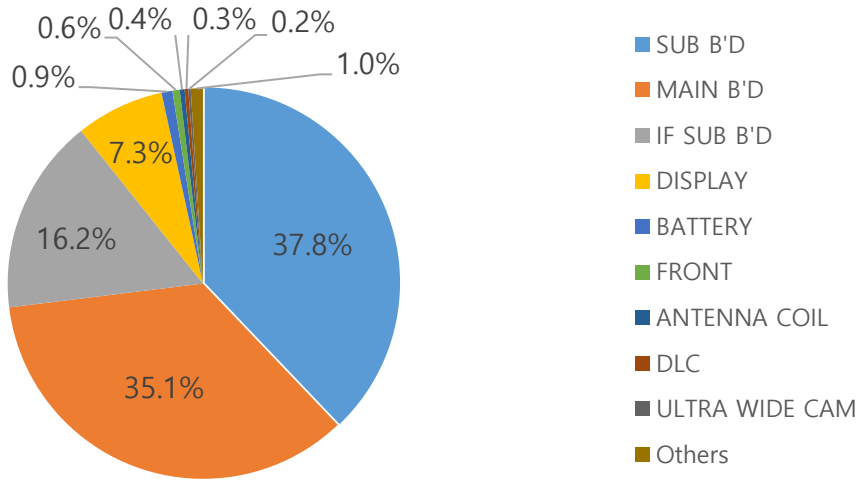
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

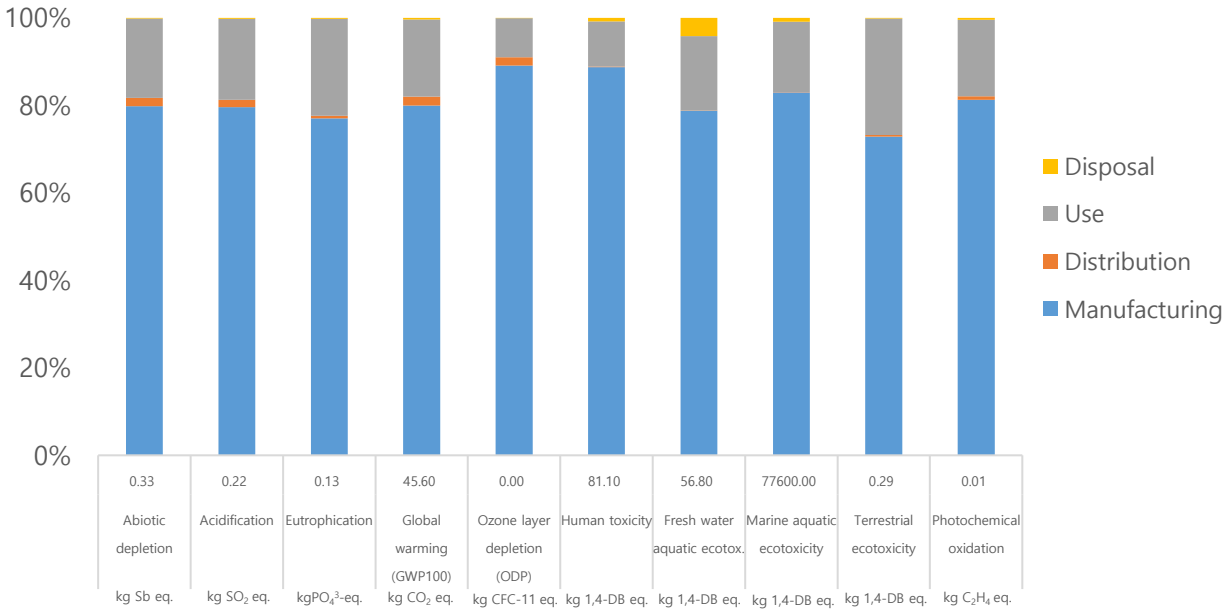
## Product Features

| | |
|---|---|
| Model name | SM-S911B(Galaxy S23) |
| Dimension | 146.3 x 70.9 x 7.6 mm |
| Display | OLED 6.1” |
| Weight | Product&Acc. : 184.78 g<br>Packages : 112.46 g |

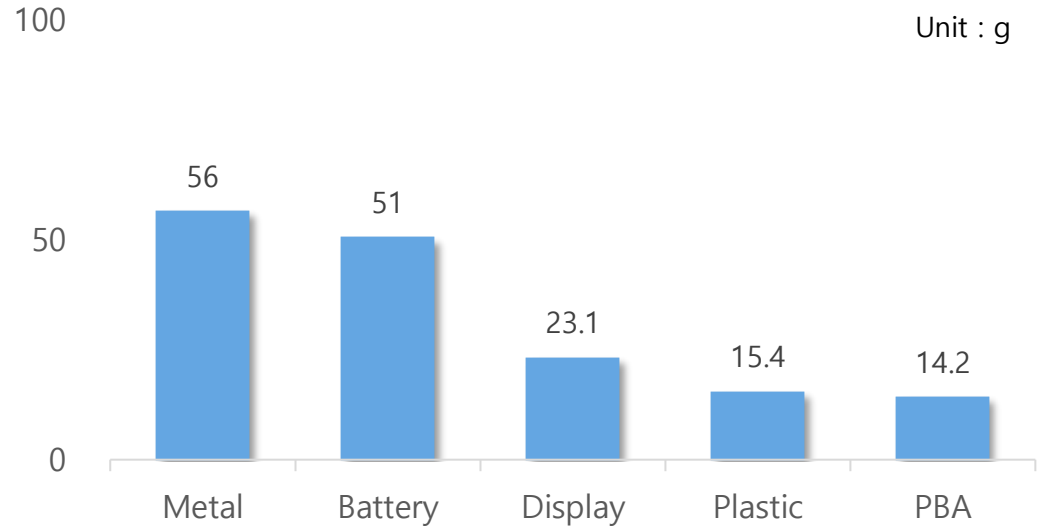
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S23

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Vietnam and KOR to US |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

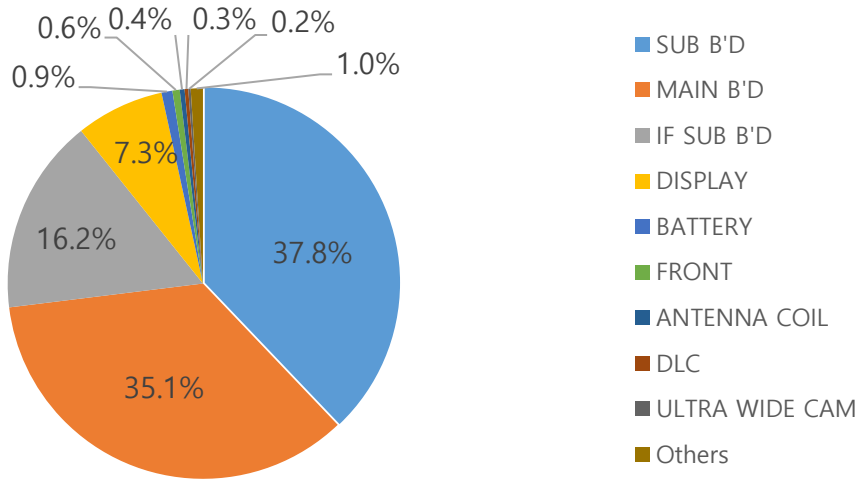
LCA Report Issuance Date : Feb 28, 2023

Webpage Publication Date of Summary of LCA : Feb 28, 2023

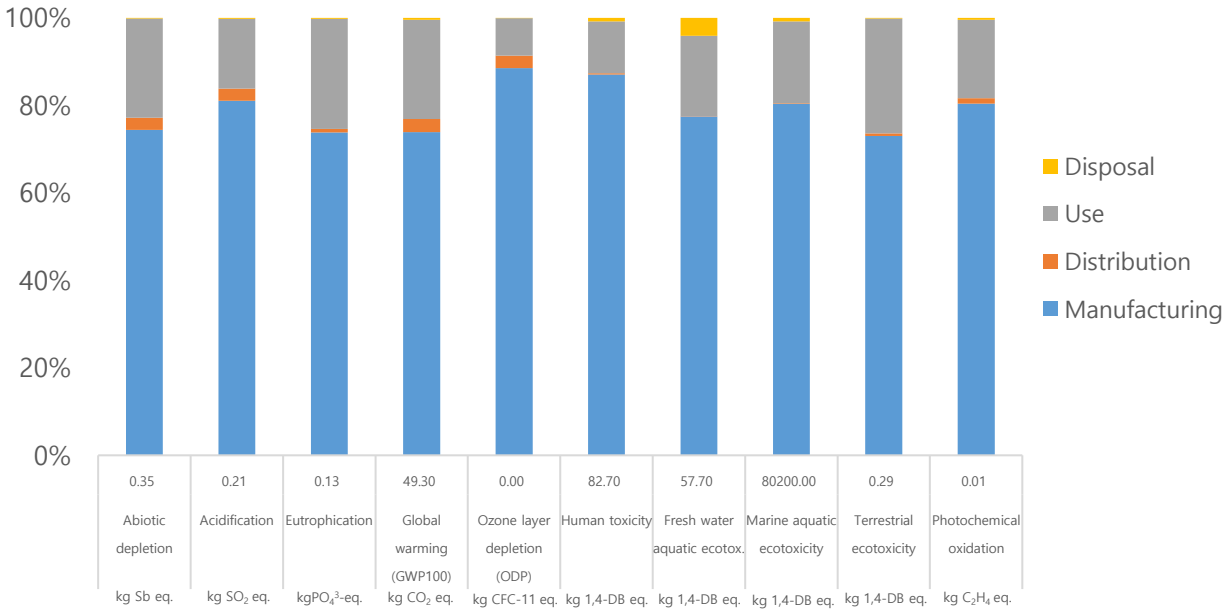
## Product Features

| | |
|---|---|
| Model name | SM-S911U(Galaxy S23) |
| Dimension | 146.3 x 70.9 x 7.6 mm |
| Display | OLED 6.1” |
| Weight | Product&Acc. : 184.78 g<br>Packages : 112.46 g |

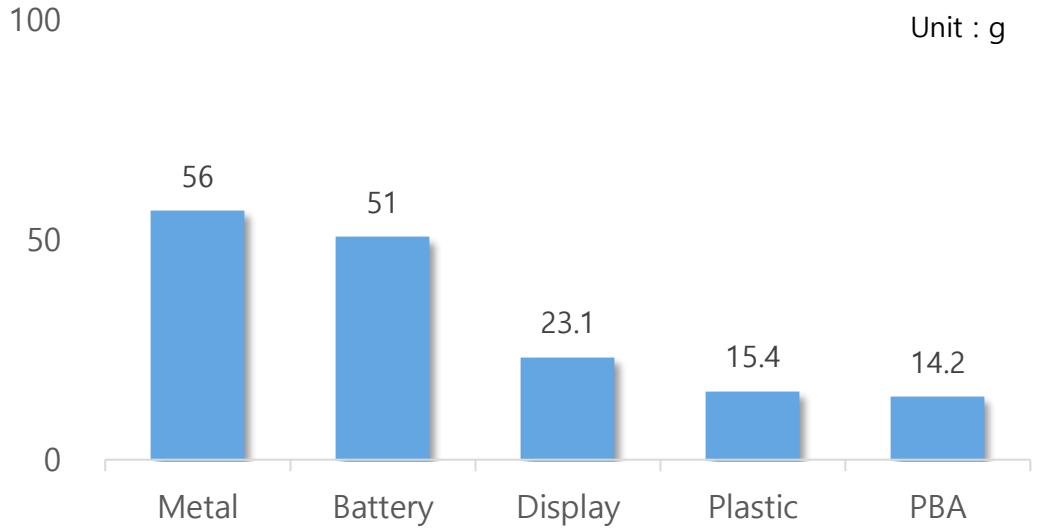
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy Z Fold4

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

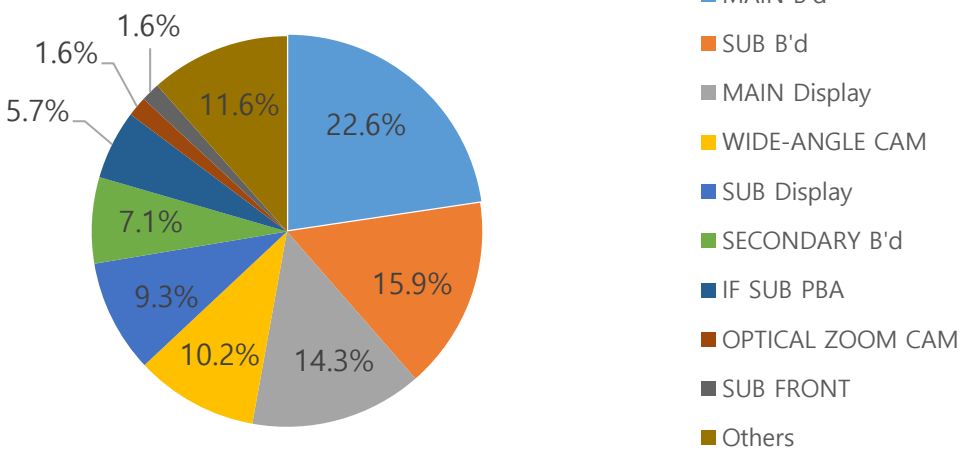
LCA Report Issuance Date : Sep 30, 2022

Webpage Publication Date of Summary of LCA : Sep 30, 2022

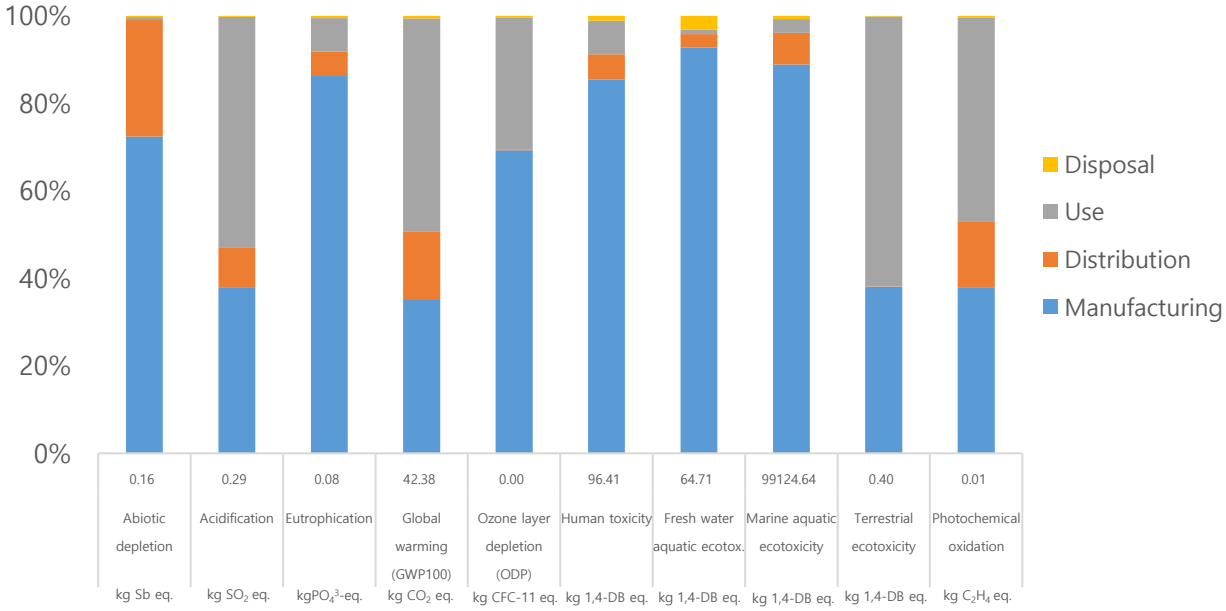
## Product Features

| | |
|---|---|
| **Model name** | SM-F936U(Galaxy Z Fold4) |
| **Dimension** | 155.1 x 130.1 x 6.3 mm |
| **Display (Main / Sub)** | OLED 7.6” / 6.2” |
| **Weight** | Product&Acc. : 284.72 g<br>Packages : 189.03 g |

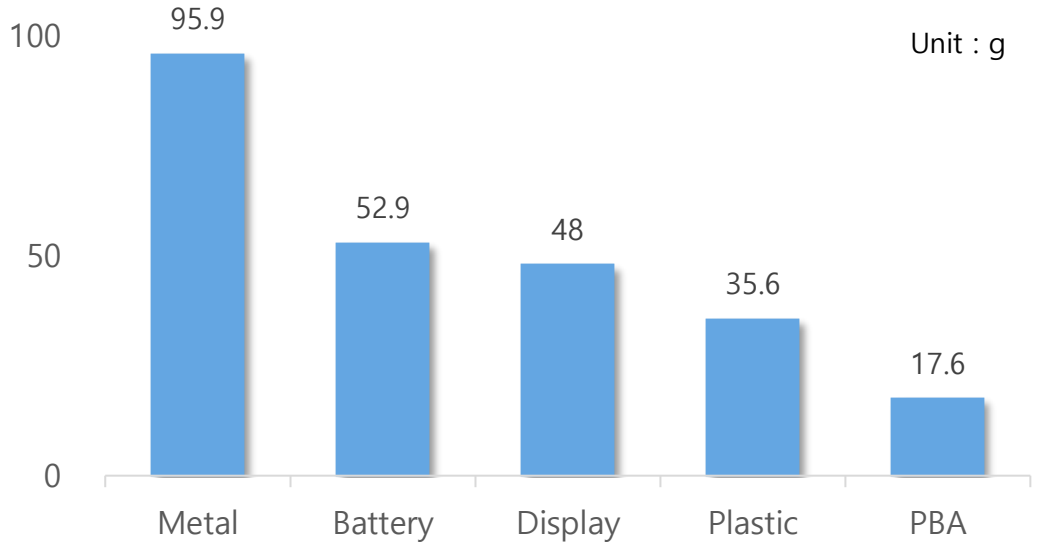
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy Z Flip4

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

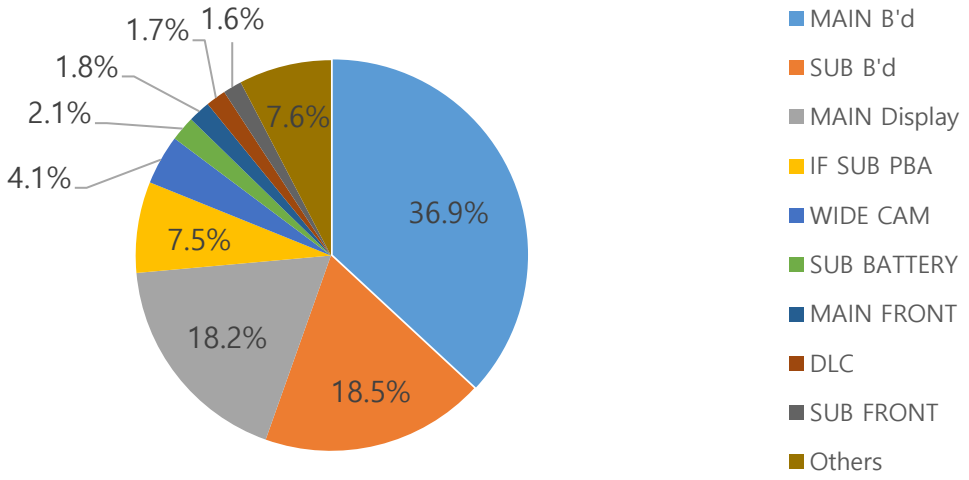
LCA Report Issuance Date : Sep 30, 2022

Webpage Publication Date of Summary of LCA : Sep 30, 2022

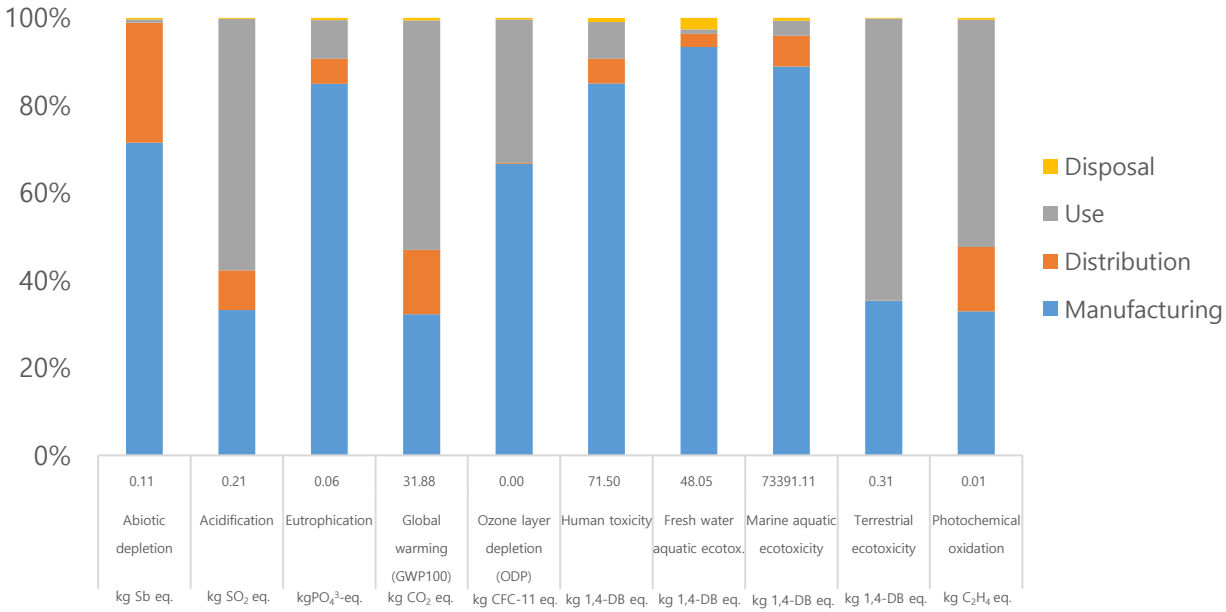
## Product Features

| | |
|---|---|
| **Model name** | SM-F721U(Galaxy Z Flip4) |
| **Dimension** | 165.2 x 71.9 x 6.9 mm |
| **Display (Main / Sub)** | OLED 6.7” / 1.9” |
| **Weight** | Product&Acc. : 208.72 g<br>Packages : 132.34 g |

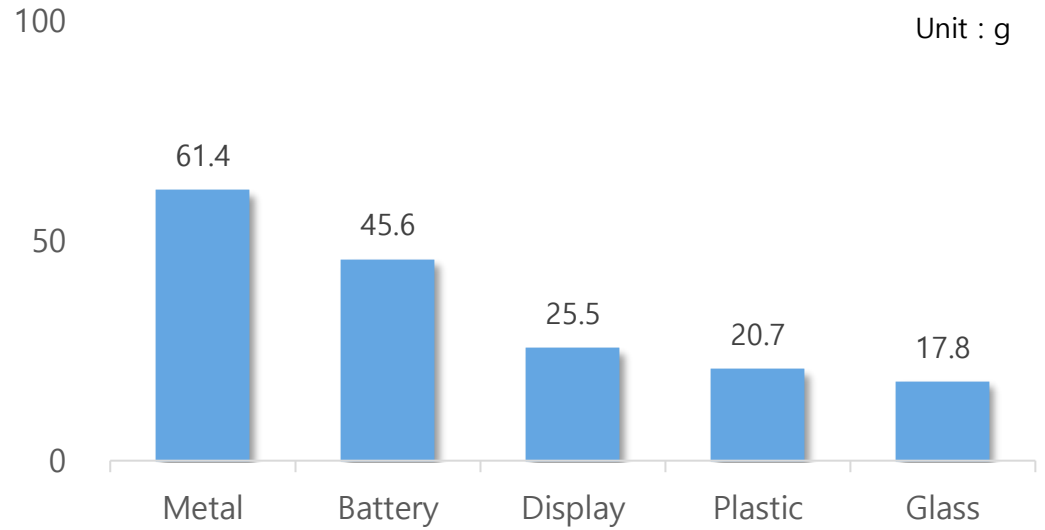
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy XCover6 Pro

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

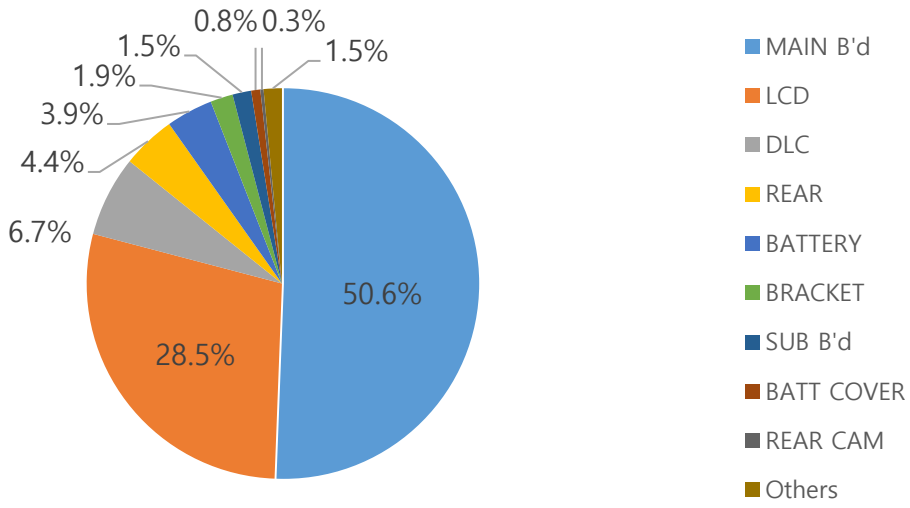
LCA Report Issuance Date : Aug 31, 2022

Webpage Publication Date of Summary of LCA : Aug 31, 2022

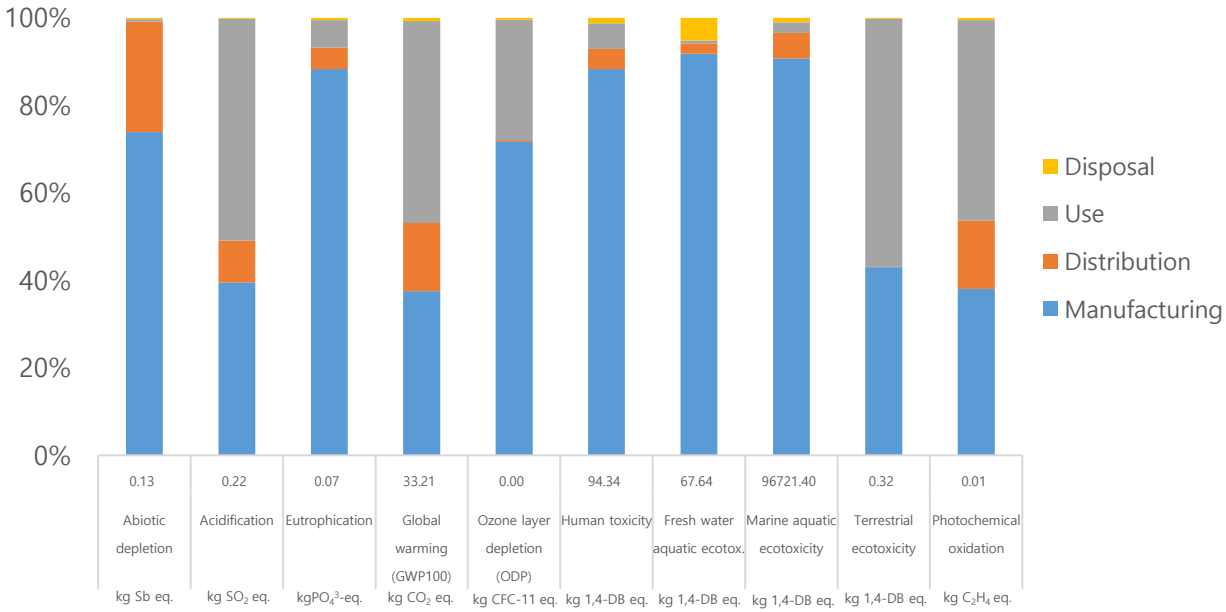
## Product Features

| | |
|---|---|
| **Model name** | SM-G736U<br>(Galaxy XCover6 Pro) |
| **Dimension** | 168.8 x 79.9 x 9.9 mm |
| **Display** | LCD 6.6” |
| **Weight** | Product&Acc. : 260.11 g<br>Packages : 115.50 g |

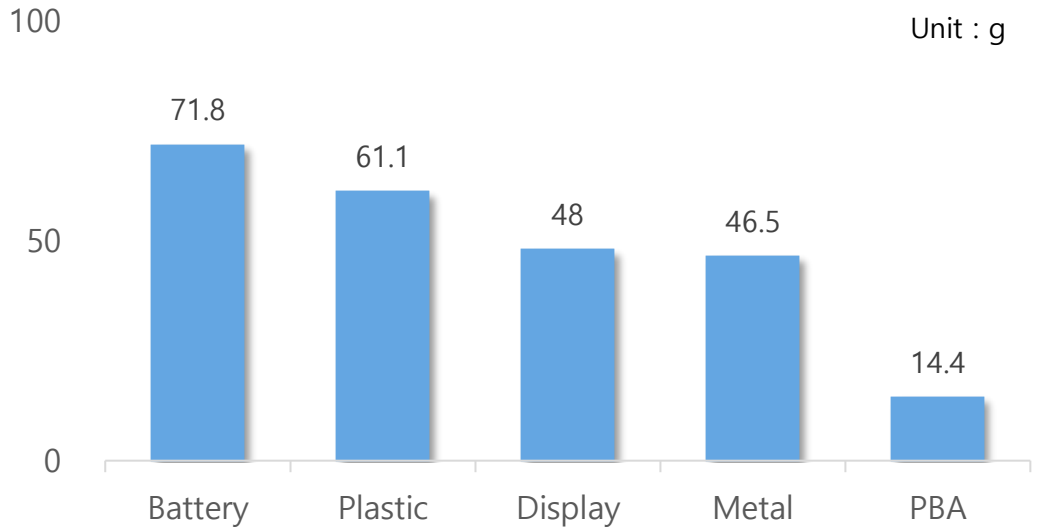
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy M13

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

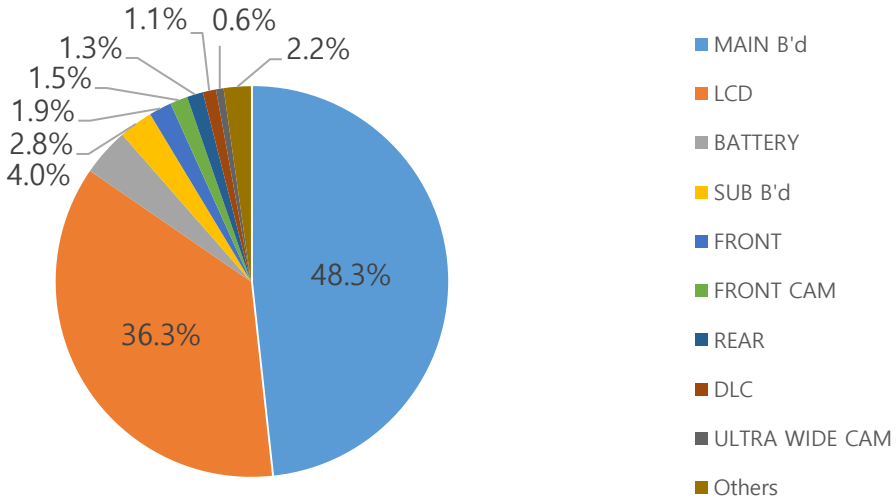
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

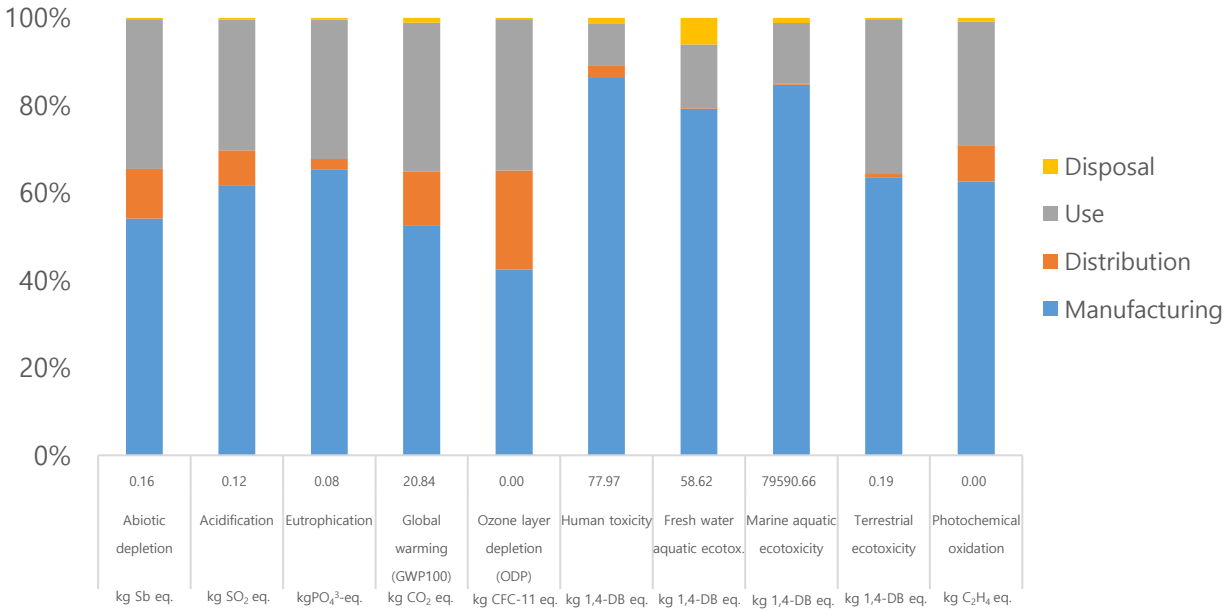
## Product Features

| | |
|---|---|
| Model name | SM-M135F(Galaxy M13) |
| Dimension | 165.4 x 76.9 x 8.4 mm |
| Display | LCD 6.6” |
| Weight | Product&Acc. : 212.35 g<br>Packages : 78.94 g |

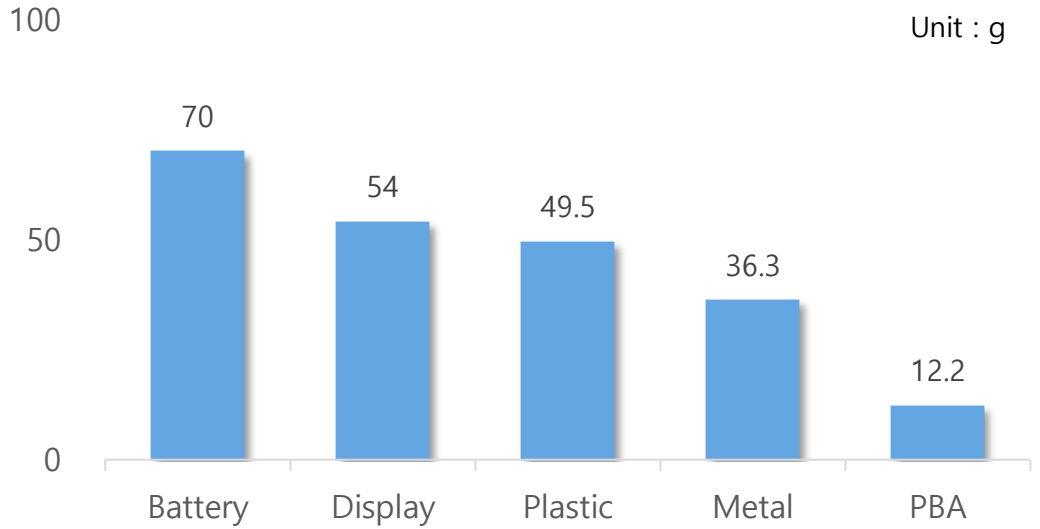
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy A73 5G

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

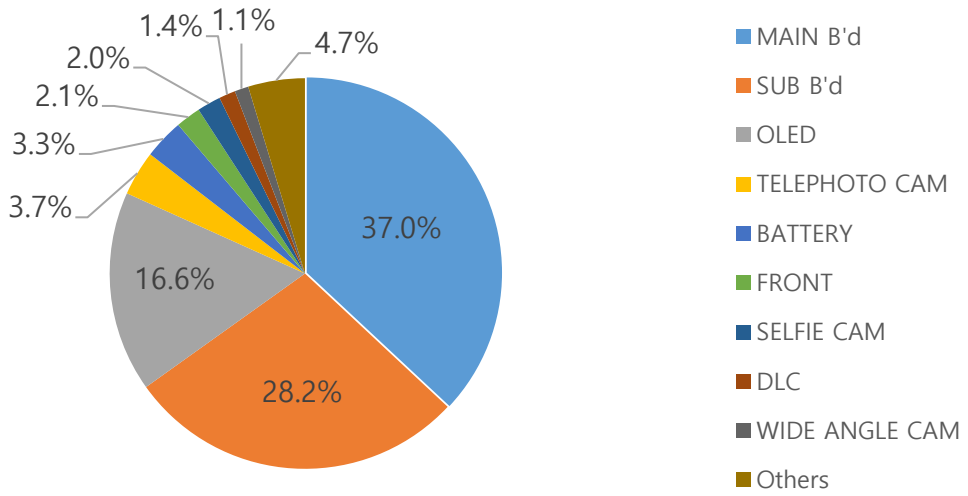
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

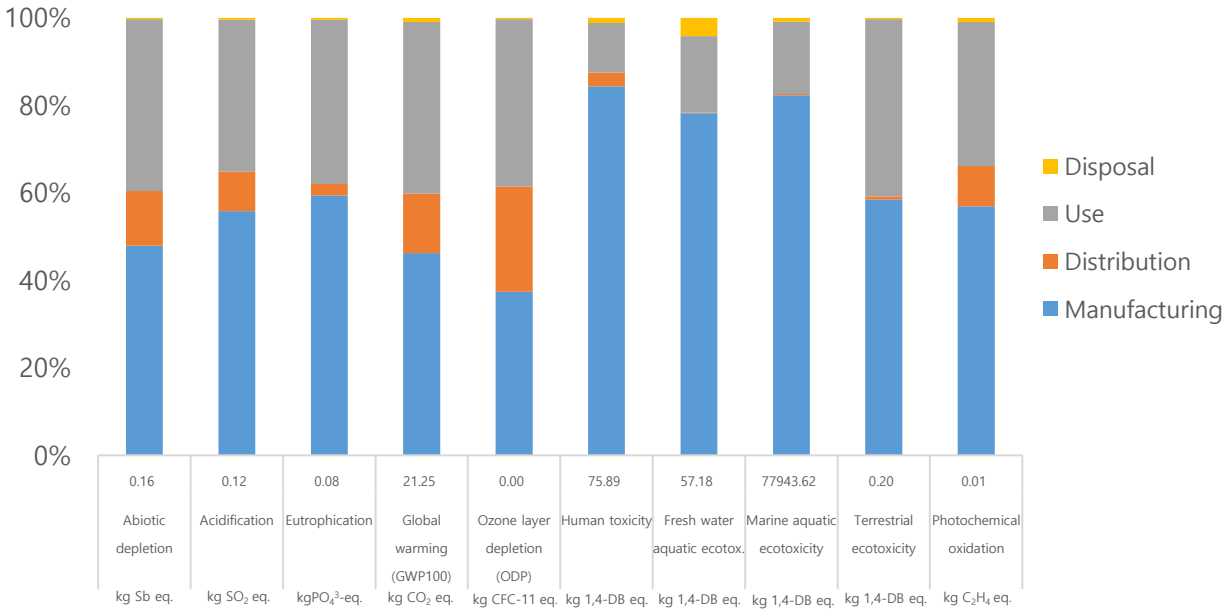
## Product Features

| | |
|---|---|
| **Model name** | SM-A736B(Galaxy A73 5G) |
| **Dimension** | 163.7 * 76.1 * 7.6 mm |
| **Display** | LCD 6.7” |
| **Weight** | Product&Acc. : 205.15 g<br>Packages : 121.67 g |

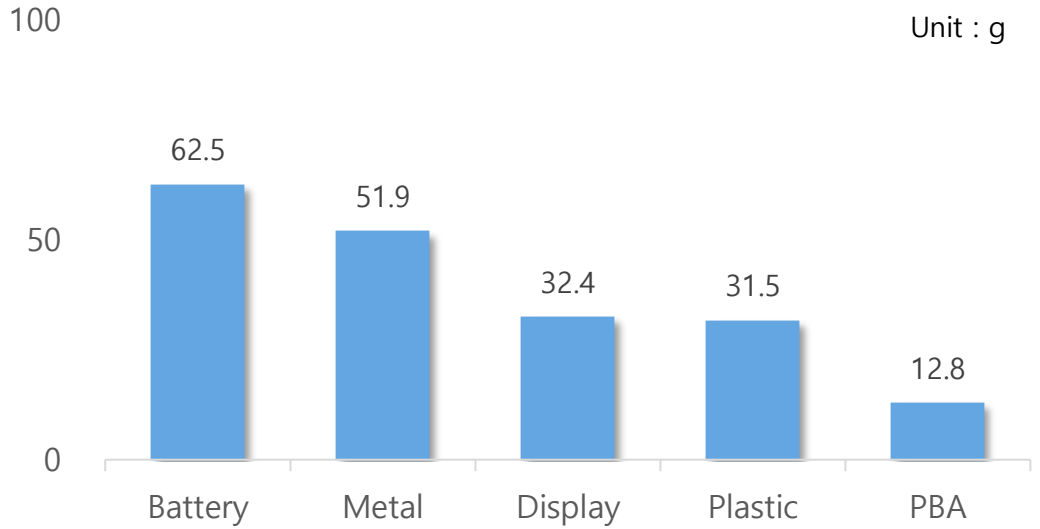
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy A23

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

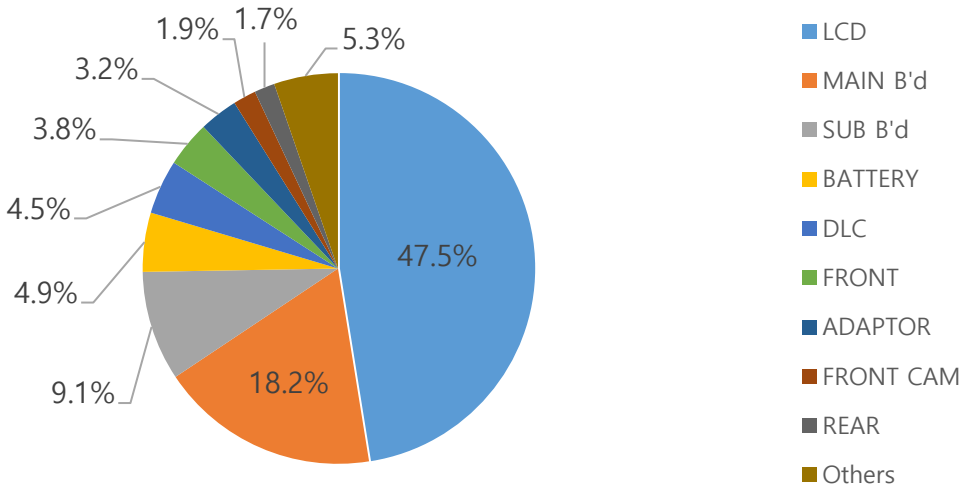
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

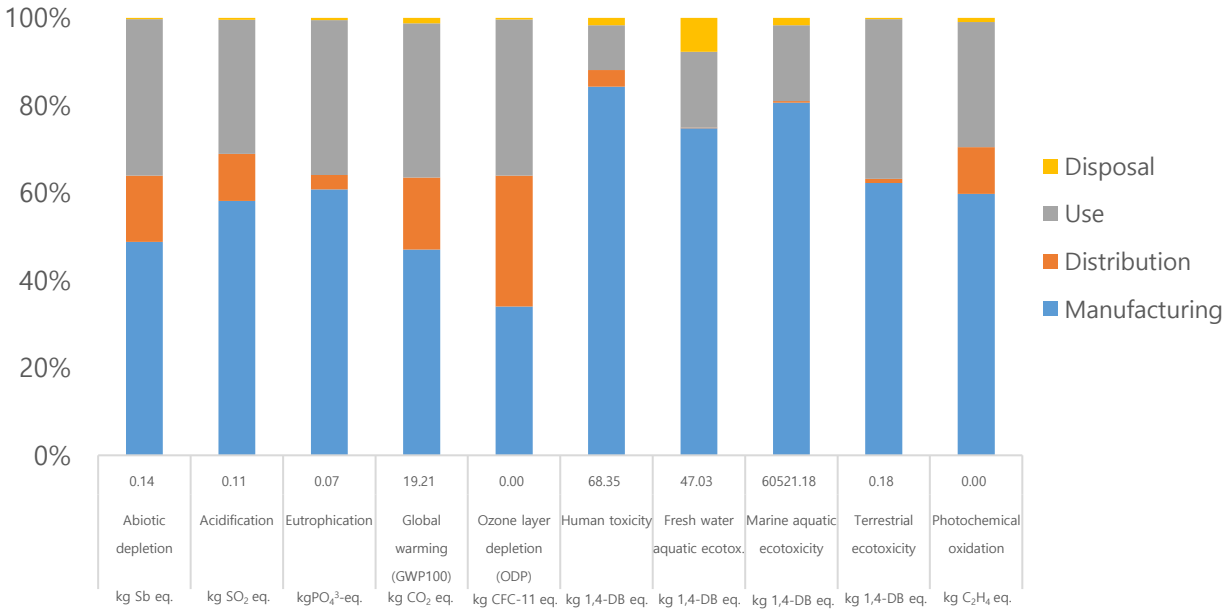
## Product Features

| | |
|---|---|
| Model name | SM-A235F (Galaxy A23) |
| Dimension | 165.4 * 76.9 * 8.4 mm |
| Display | LCD 6.6” |
| Weight | Product&Acc. : 205.29 g<br>Packages : 102.65 g |

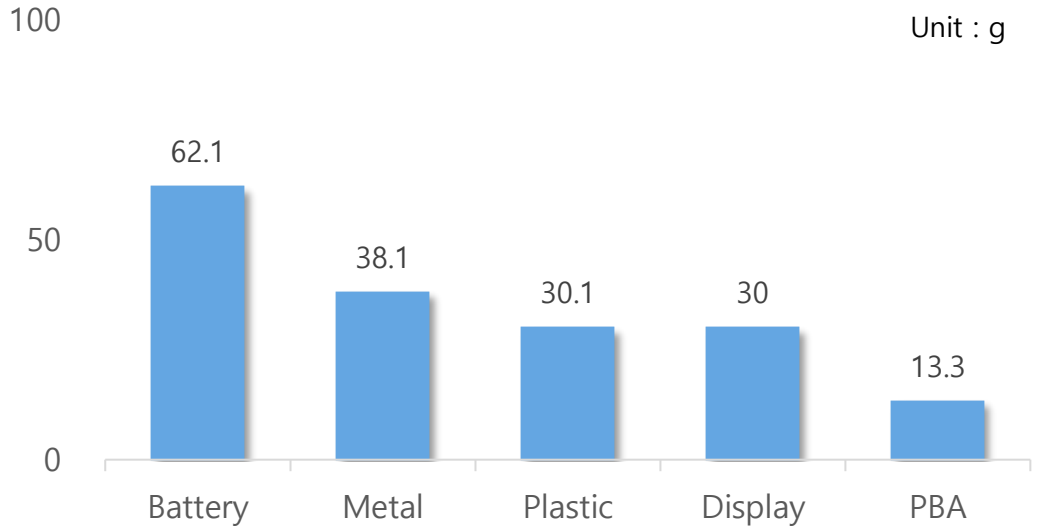
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy M53

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

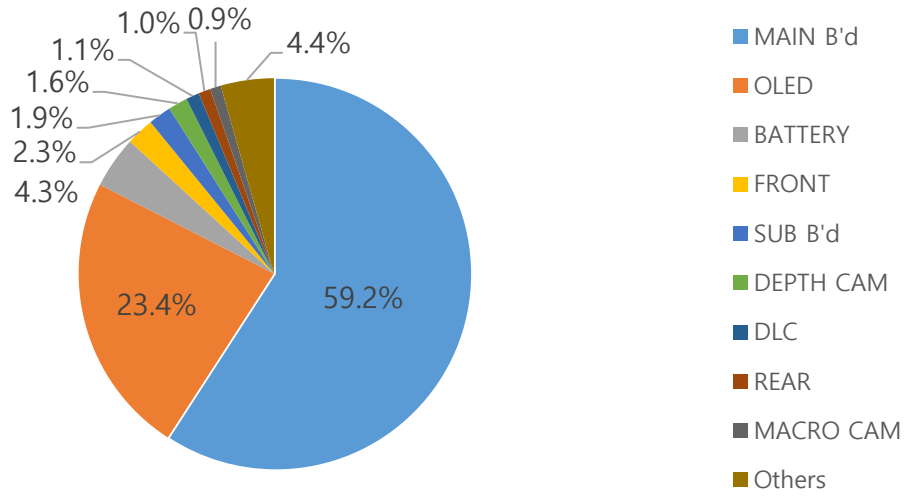
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

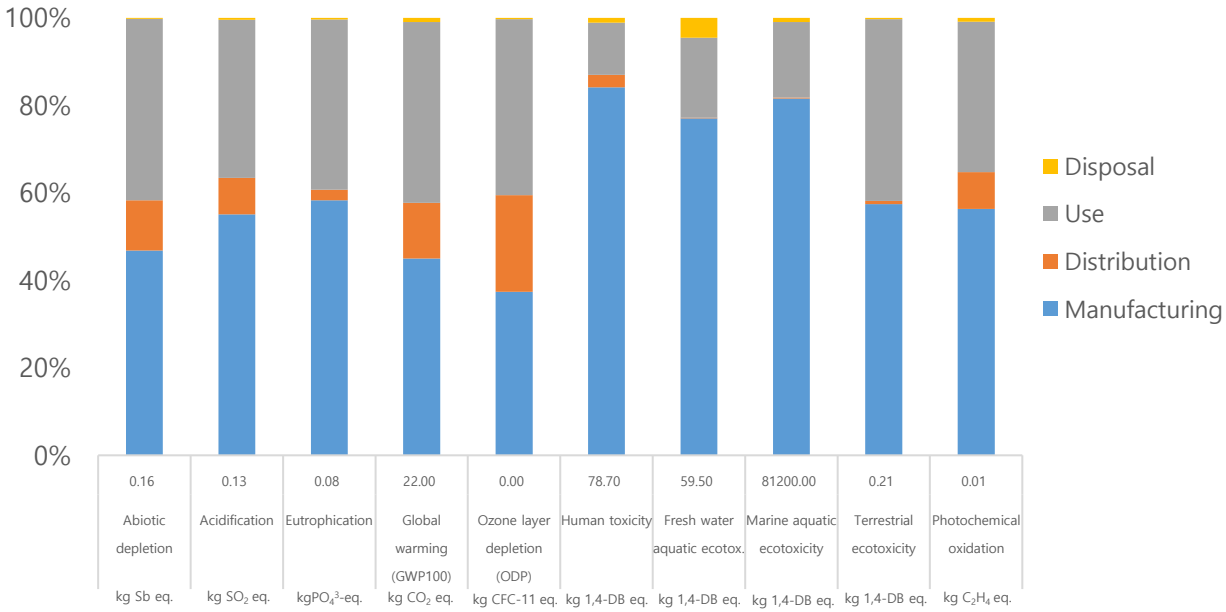
## Product Features

| | |
|---|---|
| Model name | SM-M536B(Galaxy M53) |
| Dimension | 169.5 x 77.0 x 7.4 mm |
| Display | OLED 6.7” |
| Weight | Product&Acc. : 196.85 g<br>Packages : 114.09 g |

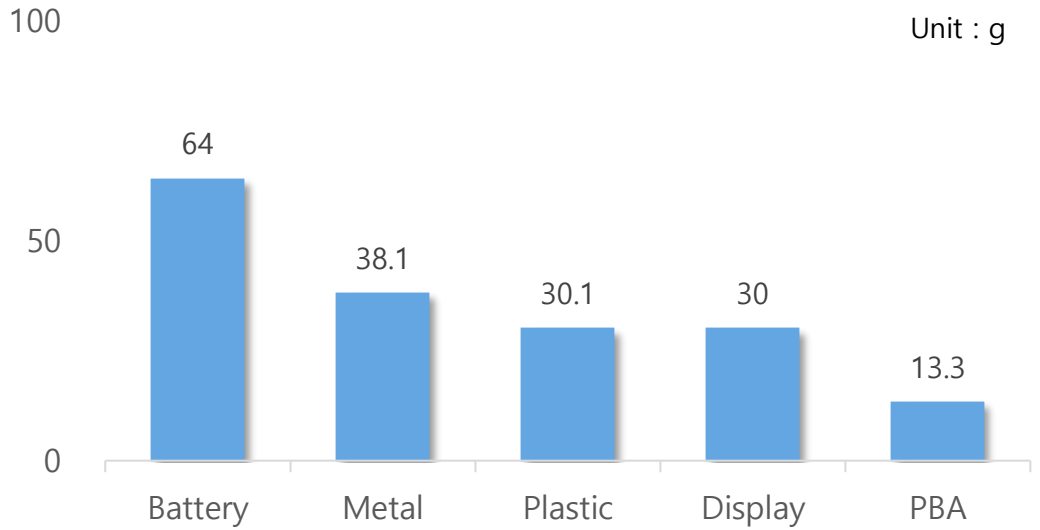
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy M33

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of ourproducts.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

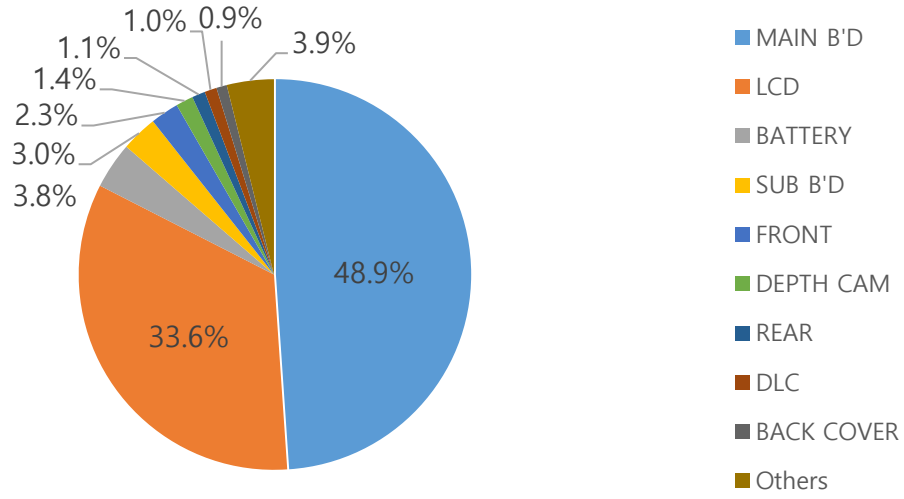
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

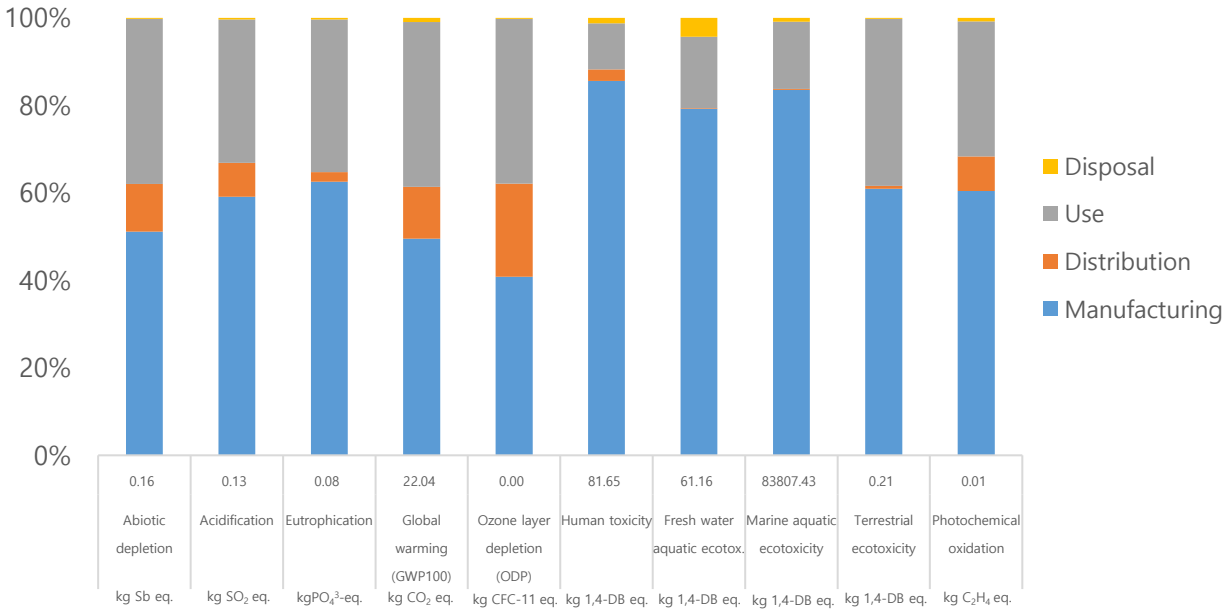
## Product Features

| | |
|---|---|
| Model name | SM-M336B(Galaxy M33) |
| Dimension | 165.4 x 76.9 x 8.4 mm |
| Display | LCD 6.6” |
| Weight | Product&Acc. : 219.40 g<br>Packages : 73.89 g |

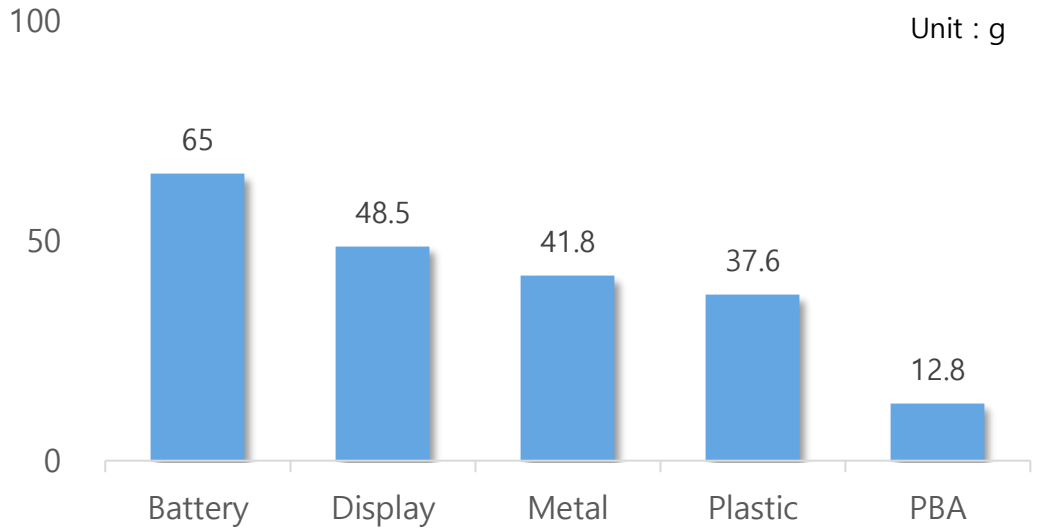
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy M23

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

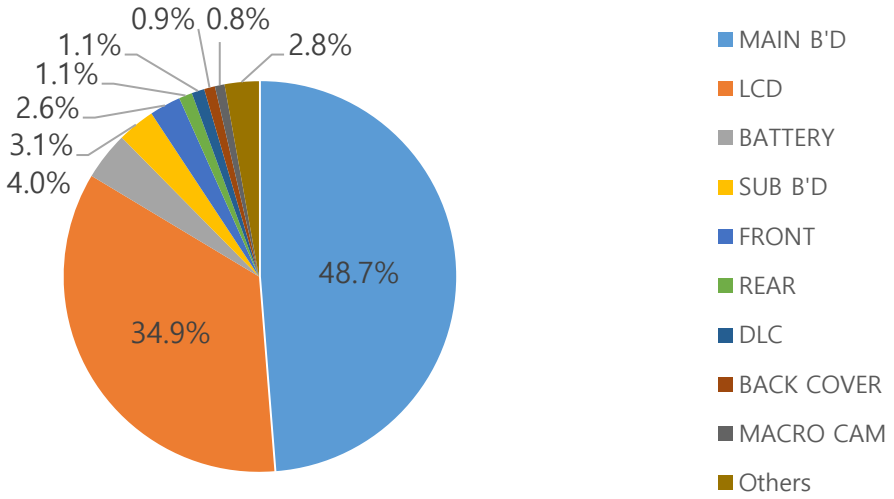
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

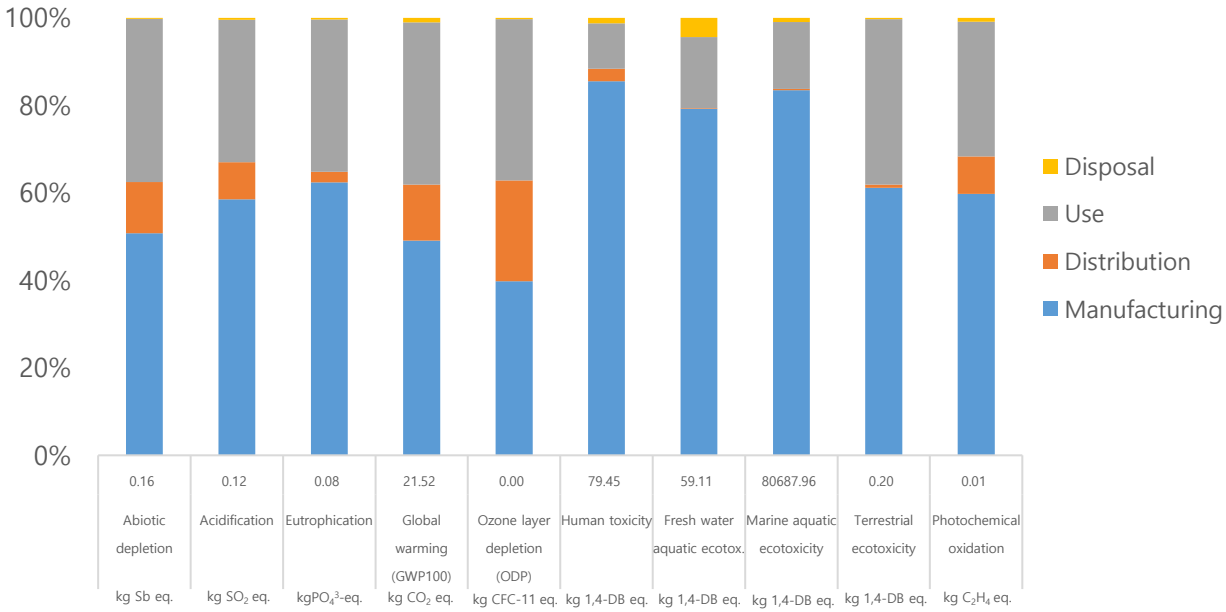
## Product Features

| | |
|---|---|
| Model name | SM-M236B(Galaxy M23) |
| Dimension | 167.2 x 77.0 x 8.4 mm |
| Display | LCD 6.6” |
| Weight | Product&Acc. : 218.55 g<br>Packages : 92.98 g |

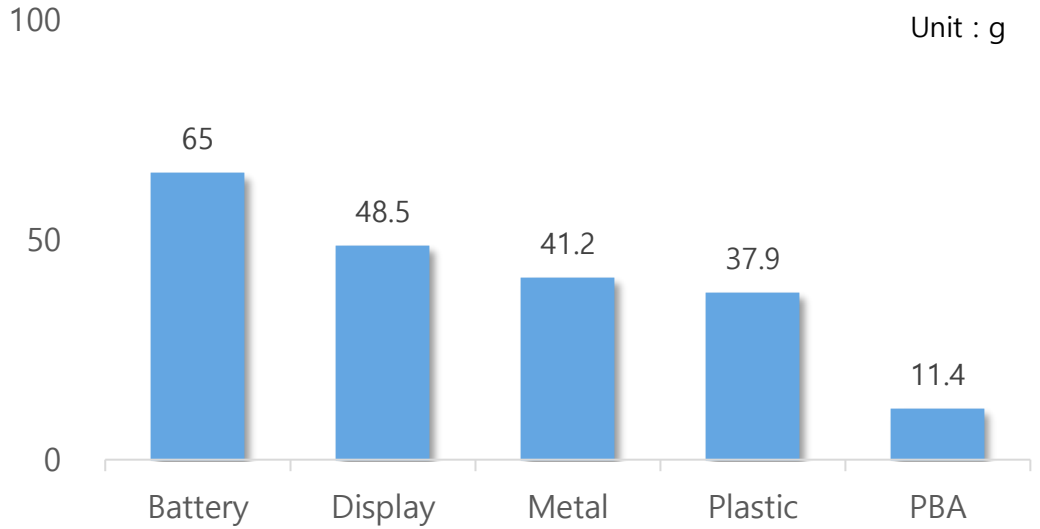
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy A13

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

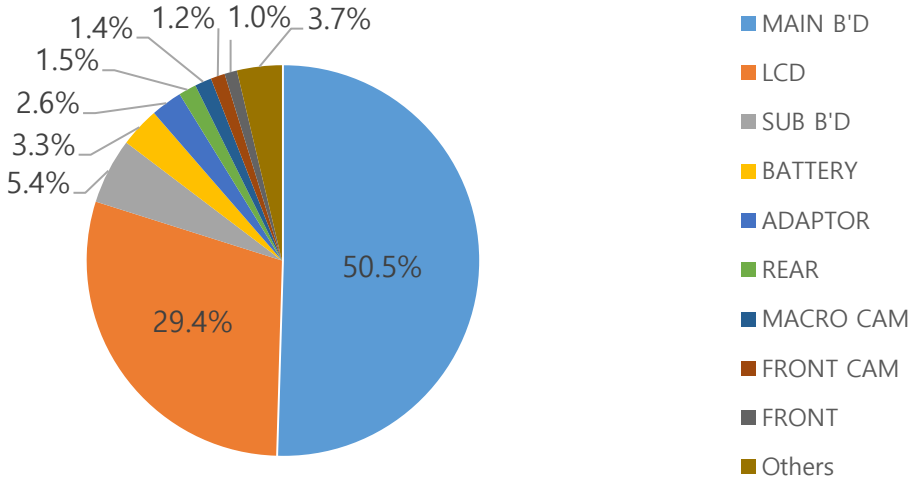
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

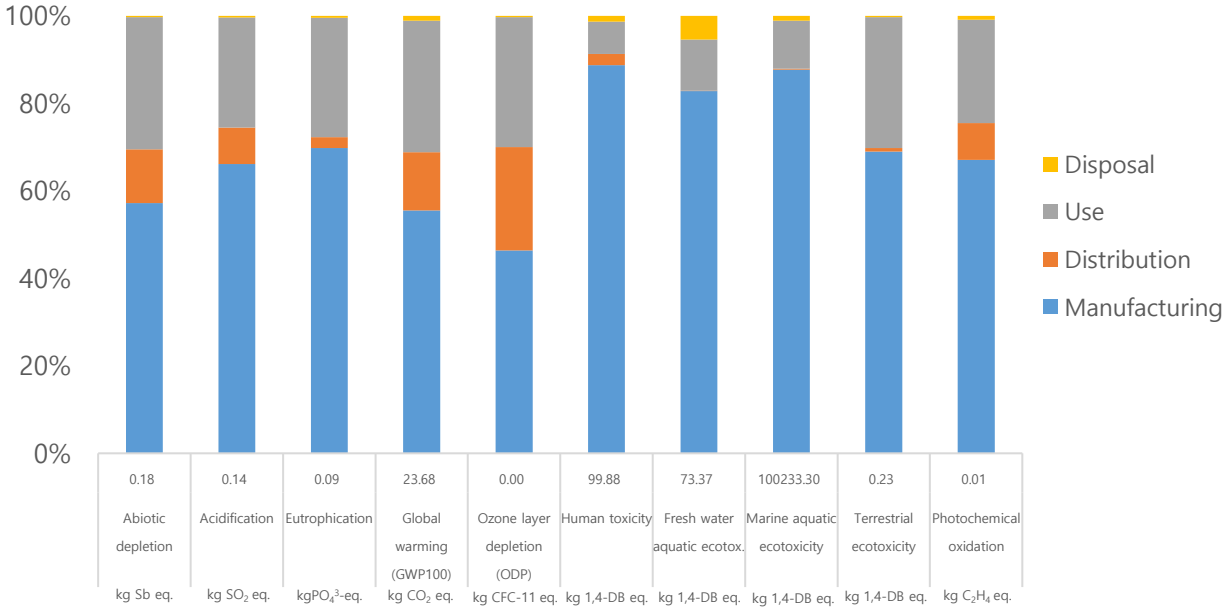
## Product Features

| | |
|---|---|
| Model name | SM-A135F(Galaxy A13) |
| Dimension | 165.1 x 76.4 x 8.8 mm |
| Display | 6.6” LCD |
| Weight | Product&Acc. : 264.14 g<br>Packages : 90.43 g |

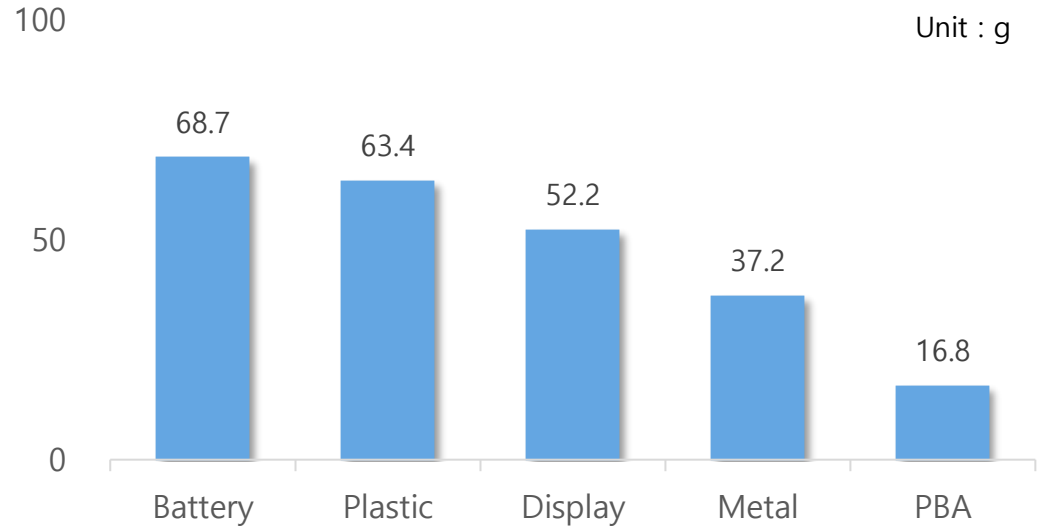
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 10 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S22 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

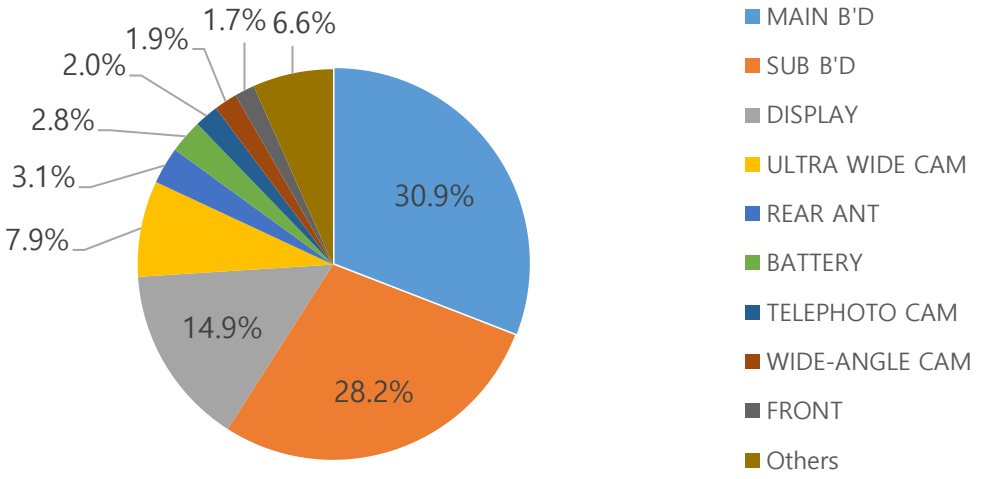
LCA Report Issuance Date : Apr 29, 2022

Webpage Publication Date of Summary of LCA : Apr 29, 2022

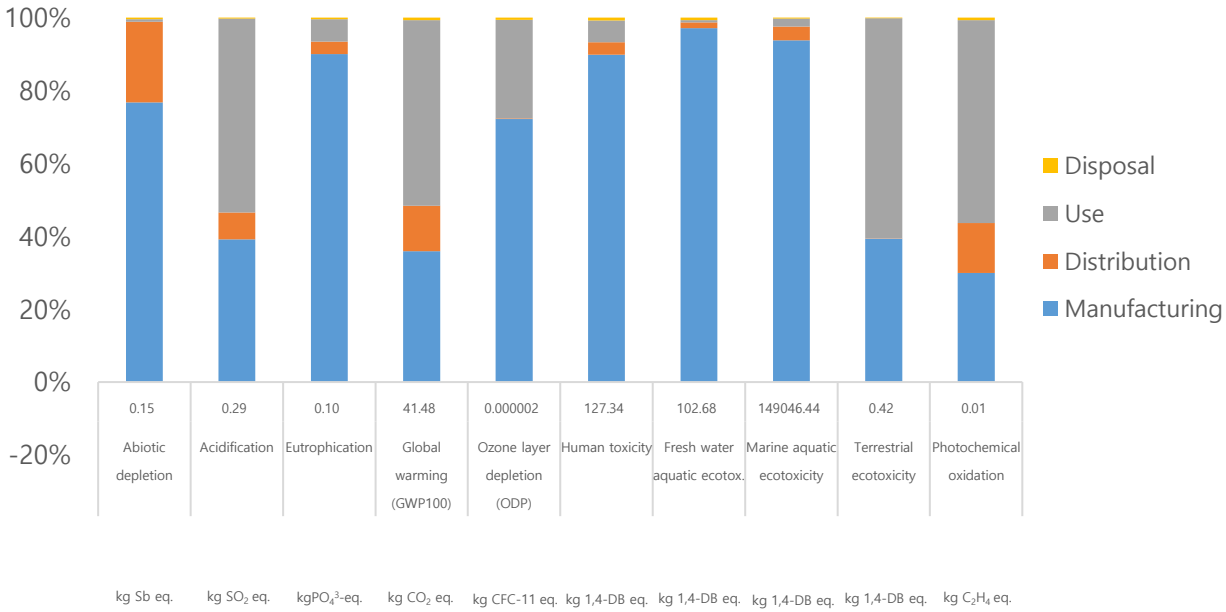
## Product Features

| | |
|---|---|
| **Model name** | SM-S908U(Galaxy S22 Ultra) |
| **Dimension** | 163.3 x 77.9 x 8.9 mm |
| **Display** | OLED 6.8” |
| **Weight** | Product & Acc. : 250.05 g<br>Packages : 124.74 g |

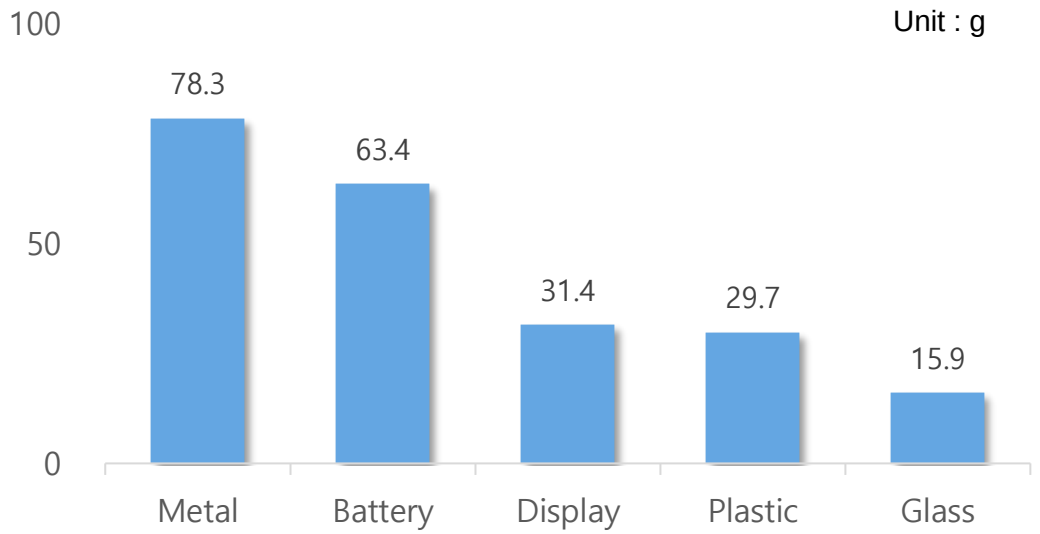
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 5 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S22+

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

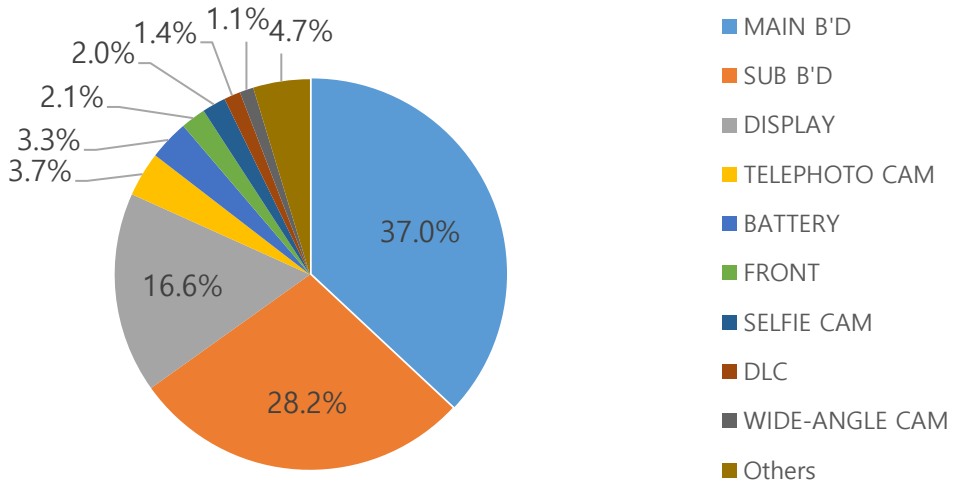
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

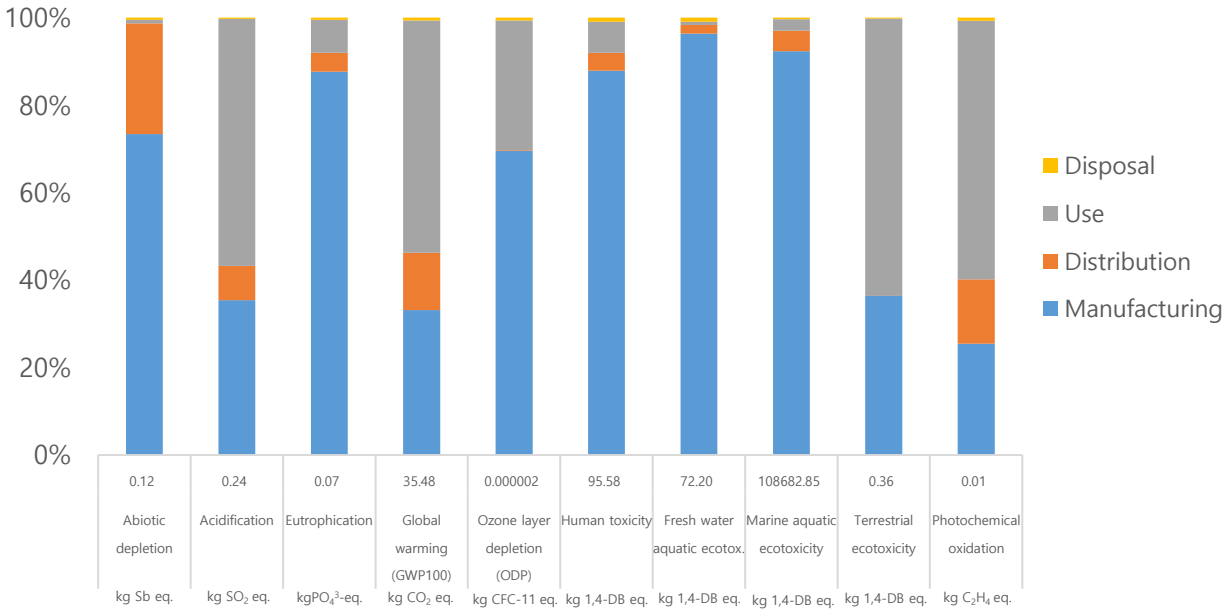
## Product Features

| | |
|---|---|
| Model name | SM-S906U(Galaxy S22+) |
| Dimension | 157.4 x 75.8 x 7.6 mm |
| Display | OLED 6.6” |
| Weight | Product & Acc. : 217.05 g<br>Packages : 121.11 g |

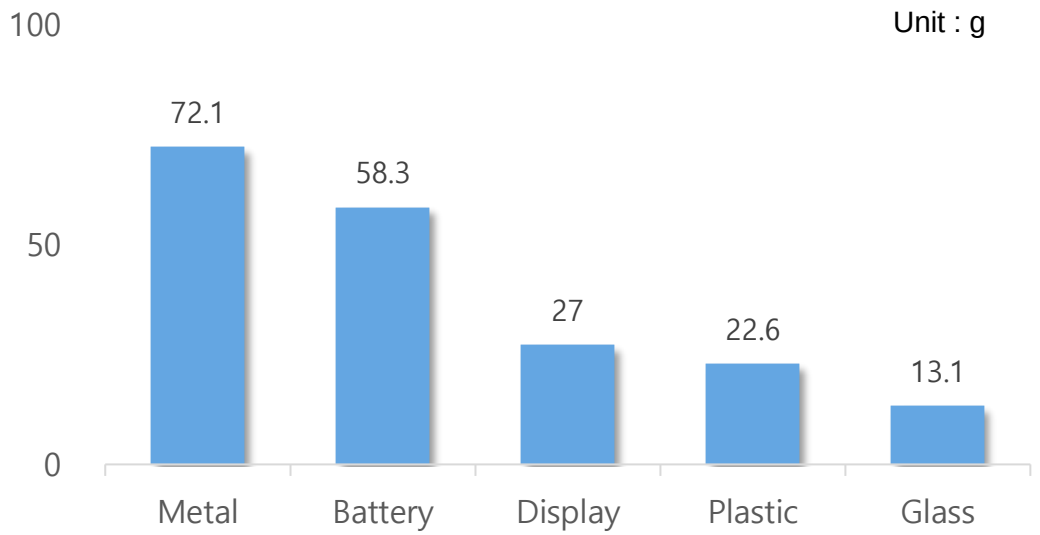
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 5 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S22

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its products. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.3.0.3 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.8 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.3.0.3 LCA tool |
| **LCA software** | SimaPro 9.3.0.3 |

## System boundary of LCA

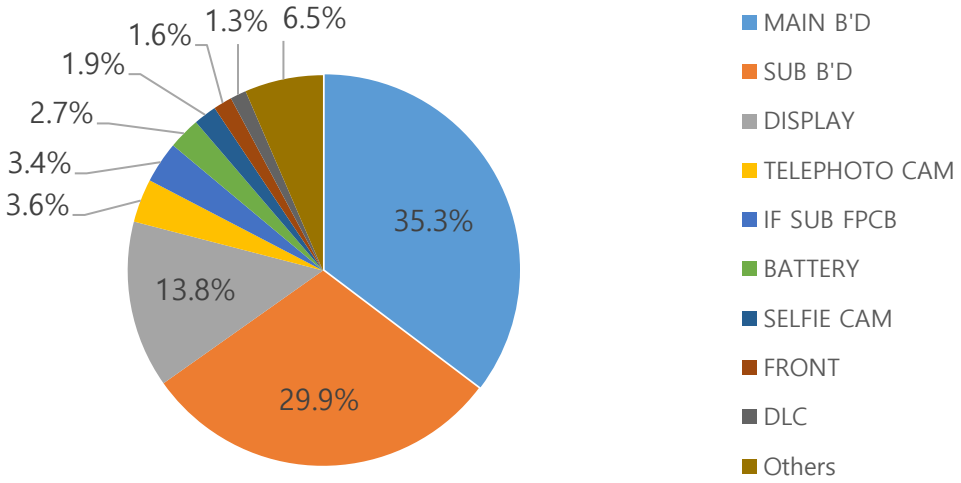
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to United States |
| **Use** | 3 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

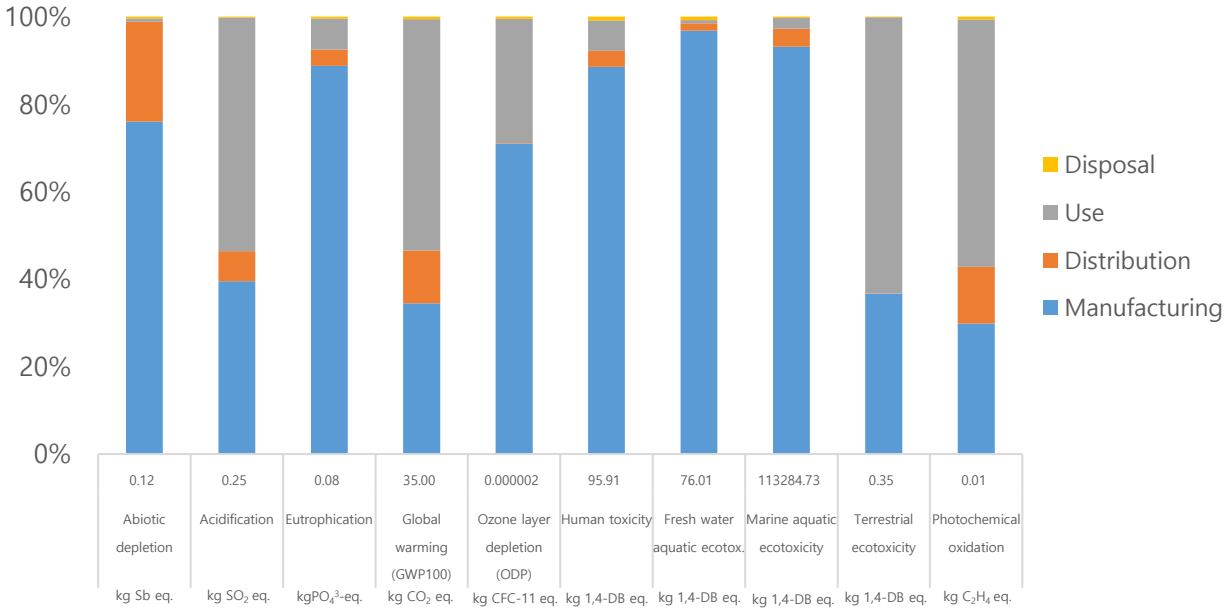
## Product Features

| | |
|---|---|
| Model name | SM-S901U(Galaxy S22) |
| Dimension | 146.0 x 70.6 x 7.6 mm |
| Display | OLED 6.1” |
| Weight | Product & Acc. : 189.17 g<br>Packages : 116.91 g |

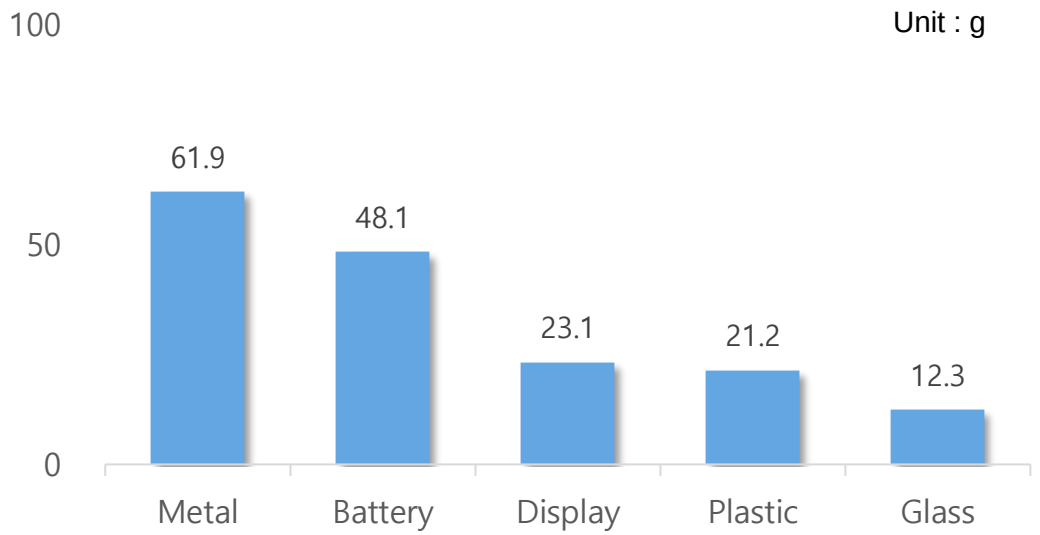
## Global Warming Impact Profile




## Characterized Environment Impact




## Top 5 Substances of Target model




※ Calculated the Top 5 heaviest materials of the target model

# Life Cycle Assessment for Galaxy S21 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

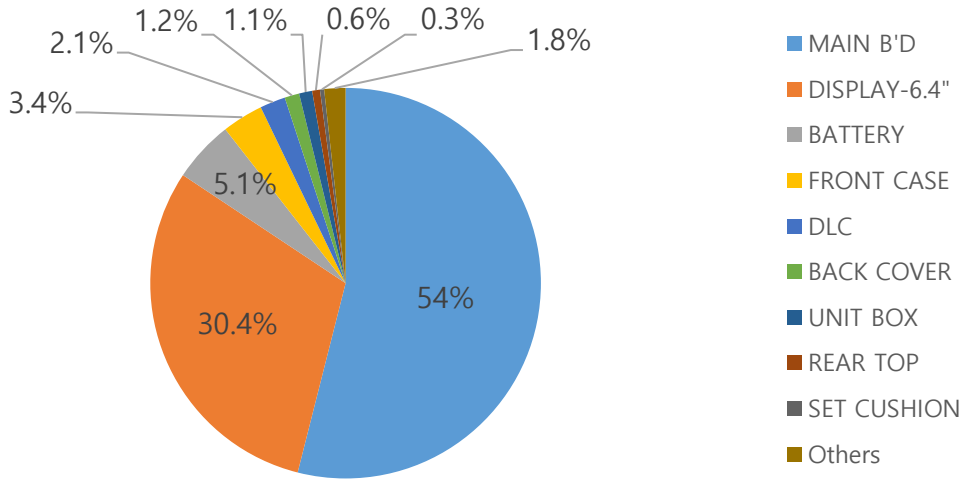
LCA Report Issuance Date : Oct 29, 2021

Webpage Publication Date of Summary of LCA : Oct 29, 2021

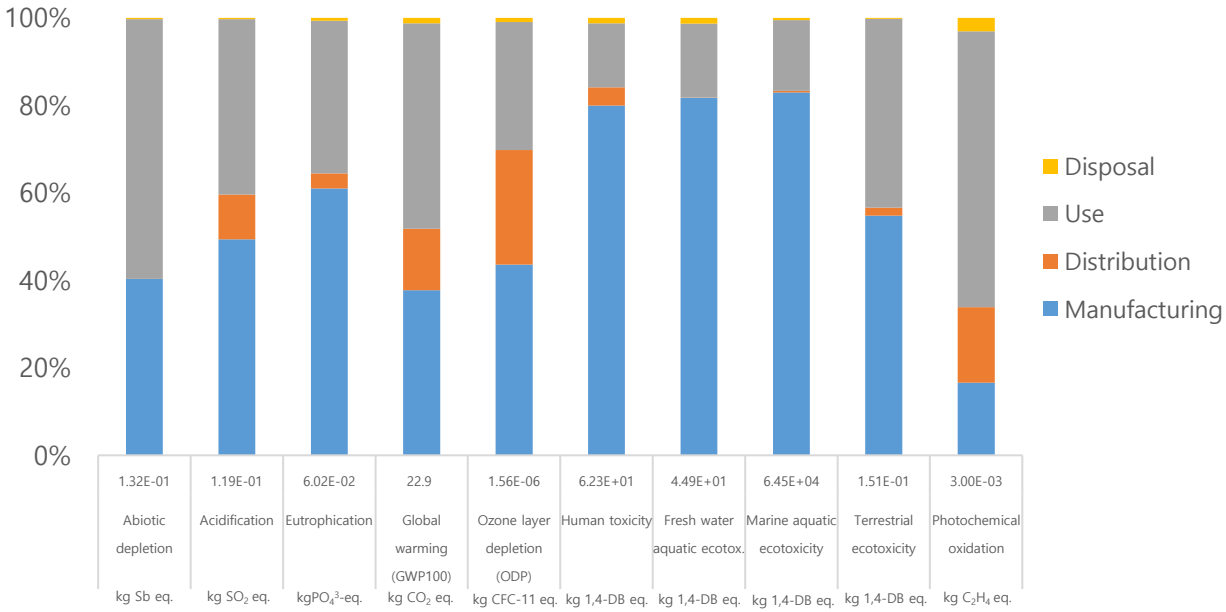
## Product Features

| | |
|---|---|
| Model name | SM-G990B(Galaxy S21 FE) |
| Dimension | 155.7 x 74.5 x 7.9 mm |
| Display | OLED 6.4” |
| Weight | Product&Acc. : 202.11 g<br>Packages : 136.43 g |

## Global Warming Impact Profile

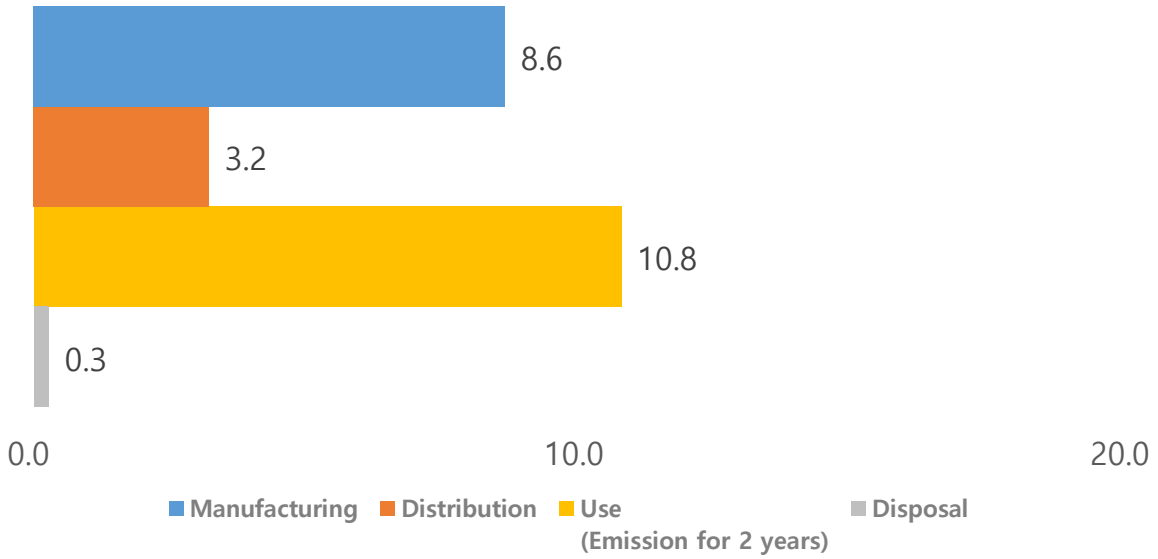



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy S20 FE

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

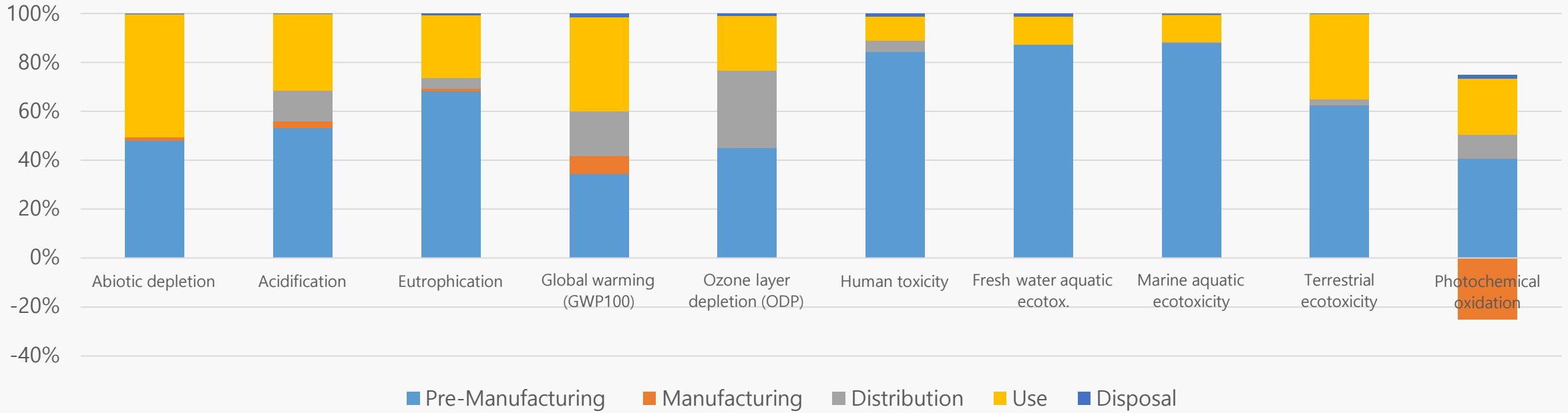
## Product Features

| | |
|---|---|
| Model name | SM-G781B(Galaxy S20 FE) |
| Processor | Qualcomm, SM8250, 2.8GHz,2.4GHz, 1.8GHz Octa-Core 64bit |
| Dimension | 159.8 x 74.5 x 8.4 mm |
| Display | On-Cell Touch AMOLED, 6.5〞 |
| Memory | ROM 128GB, RAM 6GB |
| Battery | 4370 mAh |
| Camera | Main : 12.0M pixel / Sub : 32.0M pixel |
| Weight | Product&Acc. : 253.74g / PKG : 229.66g |

## Numerical environmental impact

| Impact category | Total | Unit | Pre-Manufacturing | Manufacturing | Distribution | Use | Disposal |
|---|---|---|---|---|---|---|---|
| Abiotic depletion | 1.40E-01 | kg Sb eq. | 6.72E-02 | 1.62E-03 | 8.69E-06 | 7.03E-02 | 4.74E-04 |
| Acidification | 1.37E-01 | kg $SO_2$ eq. | 7.29E-02 | 3.37E-03 | 1.74E-02 | 4.27E-02 | 3.07E-04 |
| Eutrophication | 7.30E-02 | kg$PO_4^{3}$-eq. | 4.98E-02 | 8.88E-04 | 2.97E-03 | 1.88E-02 | 5.15E-04 |
| Global warming (GWP100) | 2.50E+01 | kg $CO_2$ eq. | 8.63E+00 | 1.84E+00 | 4.58E+00 | 9.64E+00 | 3.56E-01 |
| Ozone layer depletion (ODP) | 1.83E-06 | kg CFC-11 eq. | 8.22E-07 | 5.08E-11 | 5.83E-07 | 4.08E-07 | 1.72E-08 |
| Human toxicity | 8.20E+01 | kg 1,4-DB eq. | 6.92E+01 | 7.81E-05 | 3.69E+00 | 8.14E+00 | 1.03E+00 |
| Fresh water aquatic ecotox. | 6.02E+01 | kg 1,4-DB eq. | 5.25E+01 | 1.59E-04 | 3.26E-02 | 6.81E+00 | 8.05E-01 |
| Marine aquatic ecotoxicity | 8.41E+04 | kg 1,4-DB eq. | 7.40E+04 | 1.33E-01 | 3.22E+02 | 9.33E+03 | 4.84E+02 |
| Terrestrial ecotoxicity | 1.67E-01 | kg 1,4-DB eq. | 1.04E-01 | 4.86E-06 | 3.99E-03 | 5.83E-02 | 4.36E-04 |
| Photochemical oxidation | 3.70E-03 | kg $C_2H_4$eq. | 3.03E-03 | -1.88E-03 | 7.39E-04 | 1.69E-03 | 1.14E-04 |

## Characterized Environment Impact



# Life Cycle Assessment for Galaxy Z Fold3

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

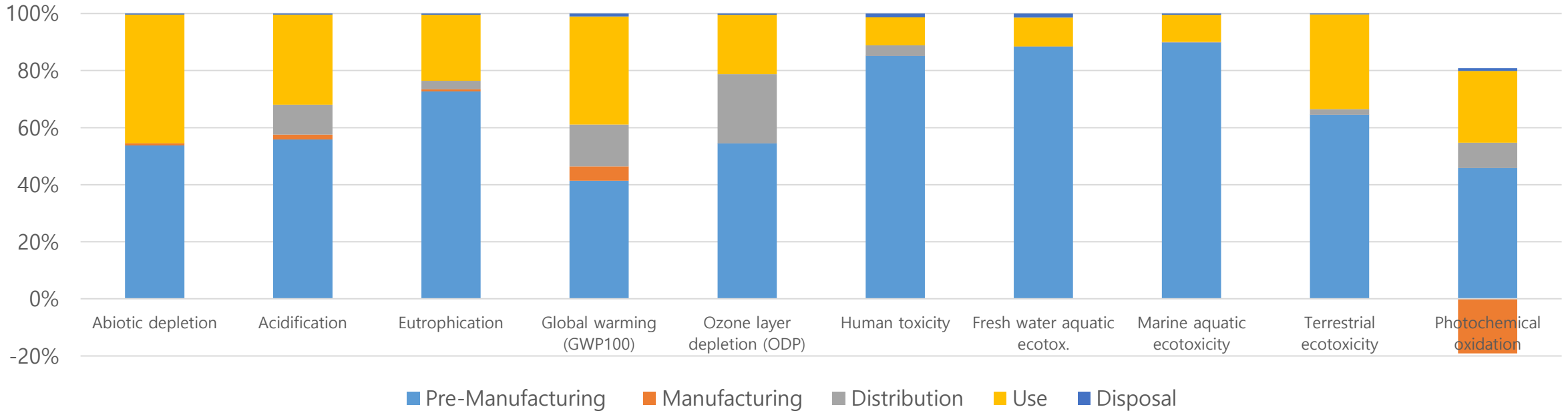
## Product Features

| | |
|---|---|
| Model name | SM-F926B(Galaxy Z Fold3) |
| Processor | Qualcomm, SM8350, 2.84GHz,2.4GHz, 1.8GHz Octa-Core 64bit |
| Dimension | 158.2 x 128.1 x 6.4 mm |
| Display | OLED 7.6” / 6.2” |
| Memory | ROM 256GB, RAM 12GB |
| Battery | 4275 mAh |
| Camera | Main : 12.0M pixel / Sub : 4.0M pixel |
| Weight | Product&Acc. : 290.16g / PKG : 209.87g |

## Numerical environmental impact

| Impact category | Total | Unit | Pre-Manu facturing | Manu facturing | Distribution | Use | Disposal |
|---|---|---|---|---|---|---|---|
| Abiotic depletion | 1.97E-01 | kg Sb eq. | 1.06E-01 | 1.42E-03 | 8.99E-06 | 8.92E-02 | 6.64E-04 |
| Acidification | 1.72E-01 | kg $SO_2$ eq | 9.58E-02 | 2.95E-03 | 1.80E-02 | 5.41E-02 | 6.35E-04 |
| Eutrophication | 1.03E-01 | kg $PO_4^{3-}$eq | 7.51E-02 | 7.78E-04 | 3.08E-03 | 2.39E-02 | 4.95E-04 |
| Global warming (GWP100) | 3.23E+01 | kg $CO_2$ eq | 1.34E+01 | 1.61E+00 | 4.74E+00 | 1.22E+01 | 3.38E-01 |
| Ozone layer depletion (ODP) | 2.49E-06 | kg CFC11 eq | 1.36E-06 | 4.45E-11 | 6.03E-07 | 5.18E-07 | 1.18E-08 |
| Human toxicity | 1.05E+02 | kg 1,4-DB eq | 8.98E+01 | 6.84E-05 | 3.83E+00 | 1.03E+01 | 1.40E+00 |
| Fresh water aquatic ecotox. | 8.56E+01 | kg 1,4-DB eq | 7.57E+01 | 1.39E-04 | 3.38E-02 | 8.64E+00 | 1.20E+00 |
| Marine aquatic ecotoxicity | 1.25E+05 | kg 1,4-DB eq | 1.12E+05 | 1.17E-01 | 3.33E+02 | 1.18E+04 | 5.53E+02 |
| Terrestrial ecotoxicity | 2.22E-01 | kg 1,4-DB eq | 1.44E-01 | 4.26E-06 | 4.13E-03 | 7.39E-02 | 6.96E-04 |
| Photochemical oxidation | 5.27E-03 | kg $C_2H_4$ | 3.92E-03 | -1.64E-03 | 7.65E-04 | 2.15E-03 | 8.25E-05 |

## Characterized Environment Impact



# Life Cycle Assessment for Galaxy Z Flip3

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

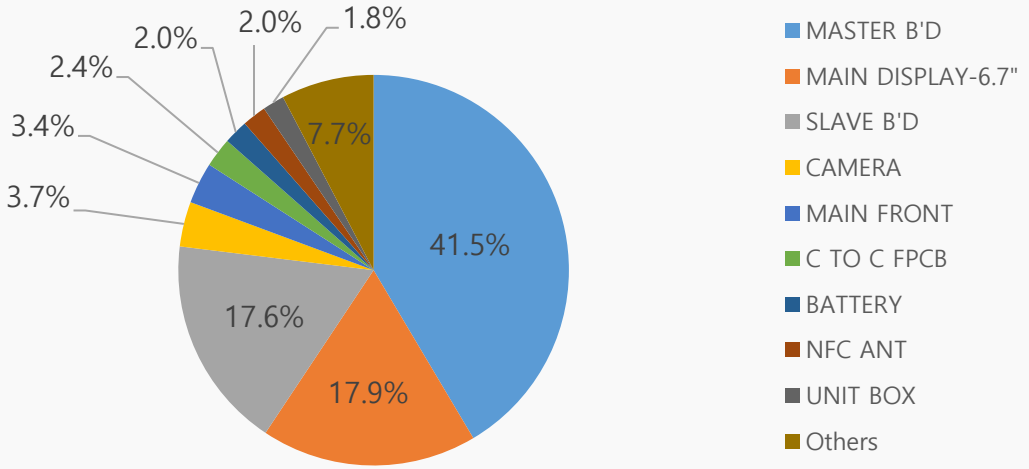
LCA Report Issuance Date : Aug 31, 2021

Webpage Publication Date of Summary of LCA : Aug 31, 2021

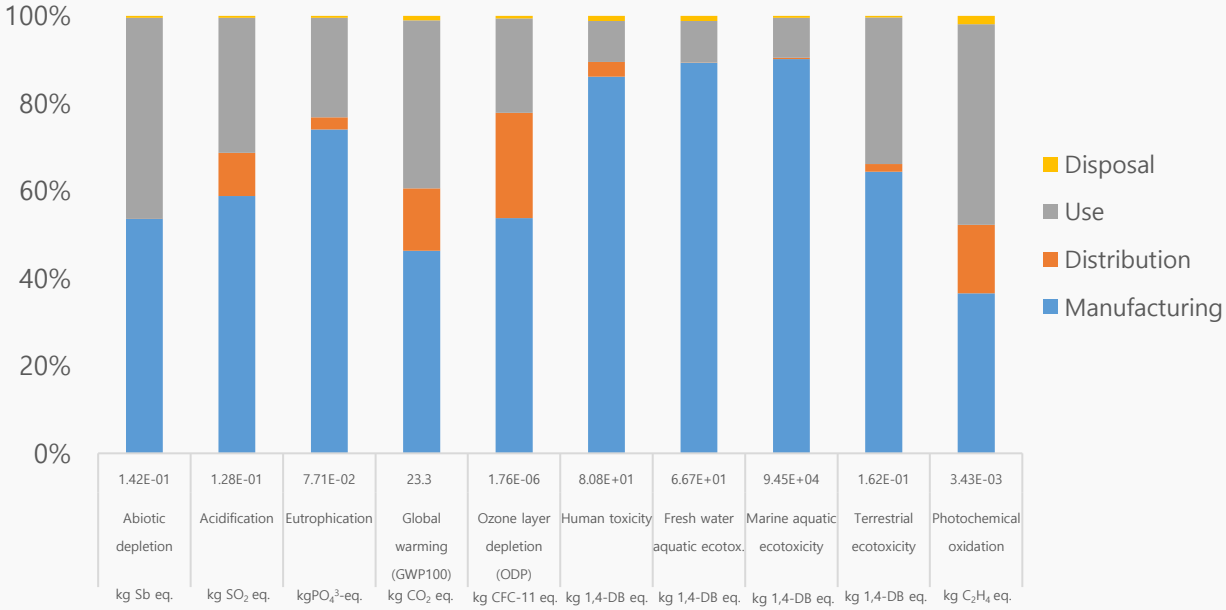
## Product Features

| | |
|---|---|
| Model name | SM-F711B(Galaxy Z Flip3) |
| Dimension | 166.0 x 72.2 x 6.9 mm |
| Display | OLED 6.7” / 1.9” |
| Weight | Product&Acc. : 209.49 g<br>Packages : 142.25 g |

## Global Warming Impact Profile

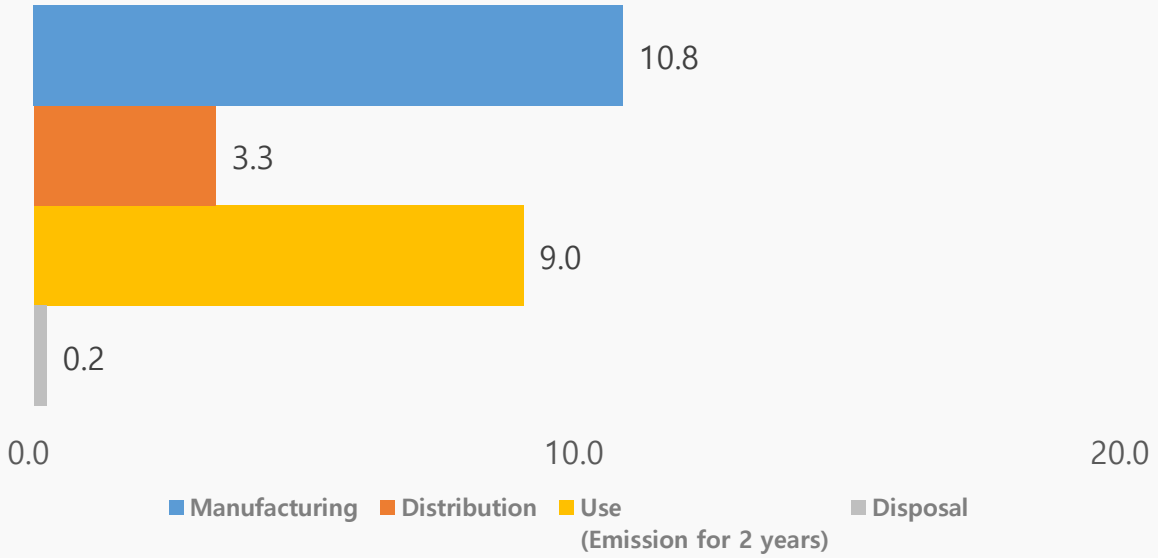



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy A12

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

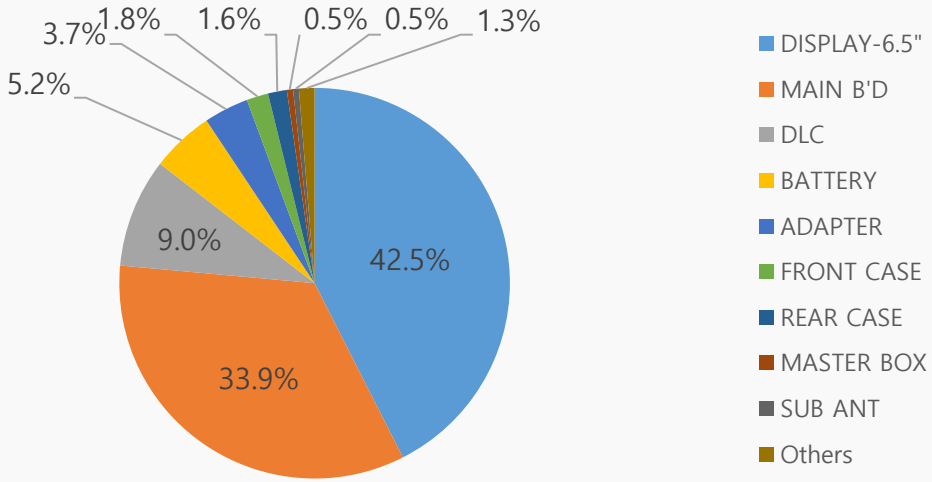
LCA Report Issuance Date : Jun 30, 2021

Webpage Publication Date of Summary of LCA : Jun 30, 2021

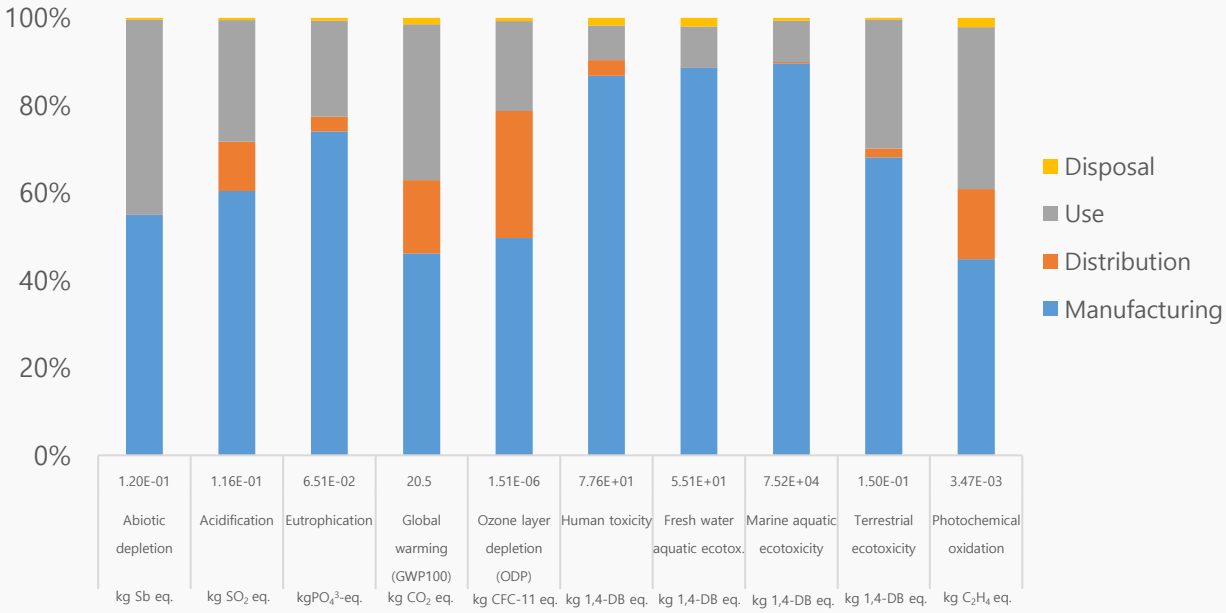
## Product Features

| | |
|---|---|
| Model name | SM-A127F(Galaxy A12) |
| Dimension | 164 × 75.8 × 8.9 mm |
| Display | LCD 6.5” |
| Weight | Product&Acc. : 268.45 g<br>Packages : 93.77 g |

## Global Warming Impact Profile

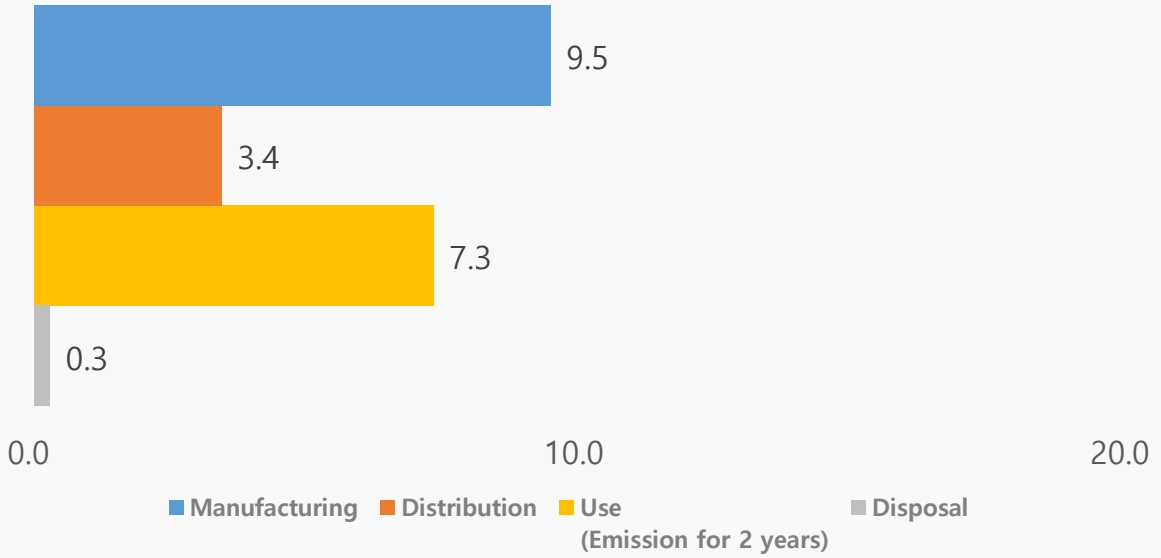



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Galaxy Note20 Ultra

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase. To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used SimaPro 9.1.1.1 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material(BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 10 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 3.6 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2 baseline 2000 V2.05 / the Netherlands, 1997 as provided in the SimaPro 9.1.1.1 LCA tool |
| **LCA software** | SimaPro 9.1.1.1 |

## System boundary of LCA

| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation |
| **Manufacturing** | Product assembly by Samsung Electronics |
| **Distribution** | From Korea to EU |
| **Use** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for LCA study was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

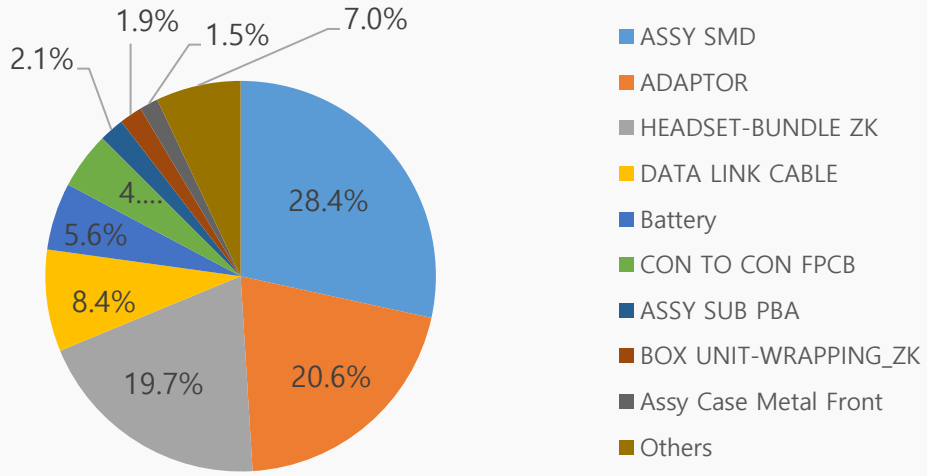
LCA Report Issuance Date : Oct 30, 2020

Webpage Publication Date of Summary of LCA : Oct 30, 2020

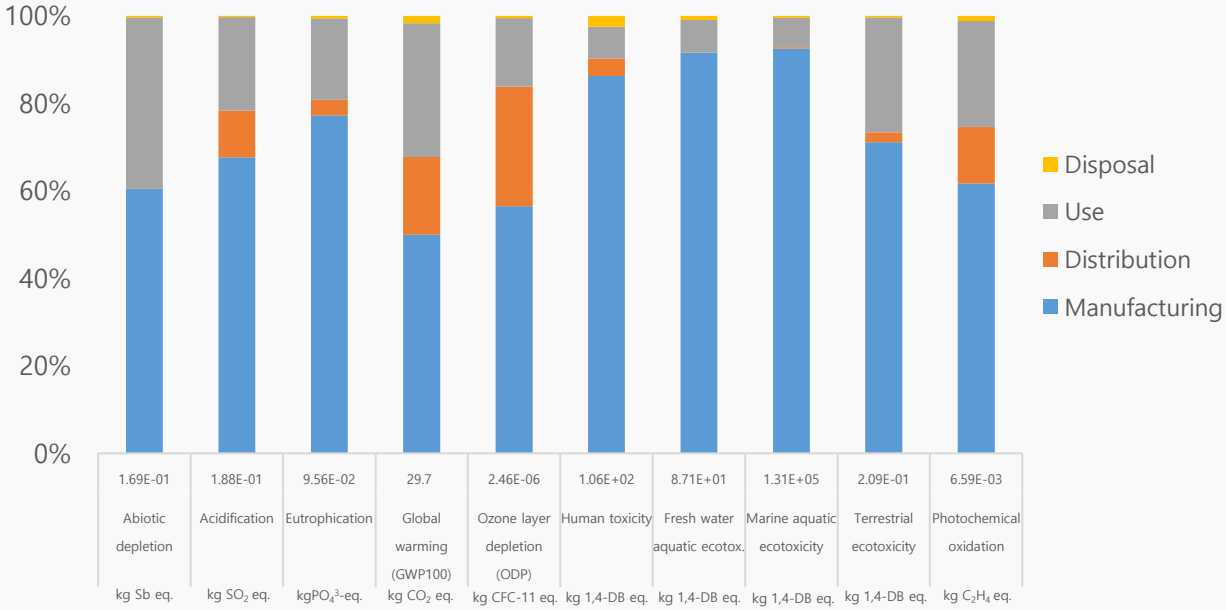
## Product Features

| | |
|---|---|
| **Model name** | SM-N986B (Galaxy Note20 Ultra) |
| **Processor** | Octa-Core 3.09GHz,2.4GHz,1.8GHz |
| **Dimension** | 164.8 x 77.2 x 8.1 mm |
| **Display** | OLED 6.9〞 |
| **Memory** | ROM 256GB, RAM 12GB |
| **Battery** | 4500 mAh |
| **Camera** | Main : 108M pixel / Sub : 10M pixel |
| **Weight** | Product&Acc. : 303.79g / PKG 252.14g |

## Global Warming Impact Profile

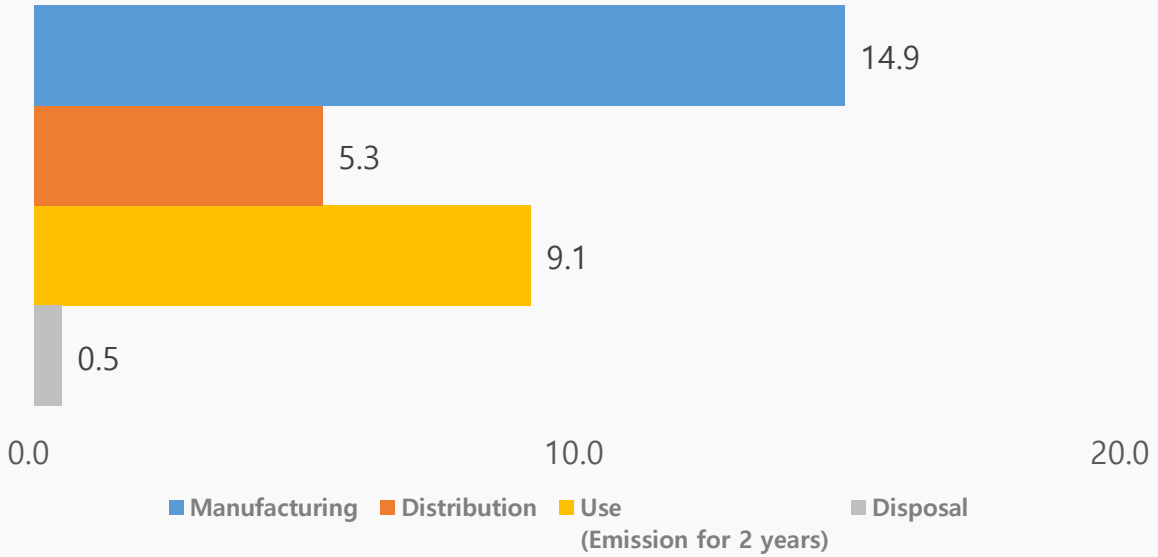



## Characterized Environment Impact




## Life Cycle Carbon Emissions

Unit : $kgCO_2$ eq.




* The results differ from to region, But not by much.

# Life Cycle Assessment for Mobile Products

## Background

Samsung has developed strong technical experience in assessing the life cycle environmental impacts of its smart phones. The most recent life cycle assessment (LCA) has been for the Samsung Galaxy S6; Note5; J1x; On5x; Note8. The assessment considers potential environmental impacts across the whole life cycle including; pre-manufacturing; product manufacturing; distribution; product use; and disposal phase.
To ensure technical quality; the analysis methodology has been completed according to international standard ISO 14040 series. Samsung has used Simapro7 software and a dedicated LCA S/W database to measure environmental impacts using a wide range of data categories including; Product bill of material (BOM), parts and components logistics, energy consumption in product use and end-of-life scenario data in order to attain the highest level of accuracy. The outcome of the LCA confirmed and quantified 12 potential environment impact categories including; global warming; abiotic depletion; ocean acidification; eutrophication; and ozone layer depletion; where each impact category has been assessed for each life cycle stage. These LCA results will continue to be considered during product development phase as we aspire to improve the environmental specifications of our products.

## Calculation basis

| | |
|---|---|
| **Standard** | ISO 14040:2006 and 14044:2006 |
| **Database** | Ecoinvent 2.2 |
| **Method for impact assessment** | Life cycle impact assessment classification and characterization factors according to CML 2001 as provided in the SimaPro 7.1.5 LCA tool |
| **LCA software** | SimaPro 7.1.5 |

## System boundary of LCA

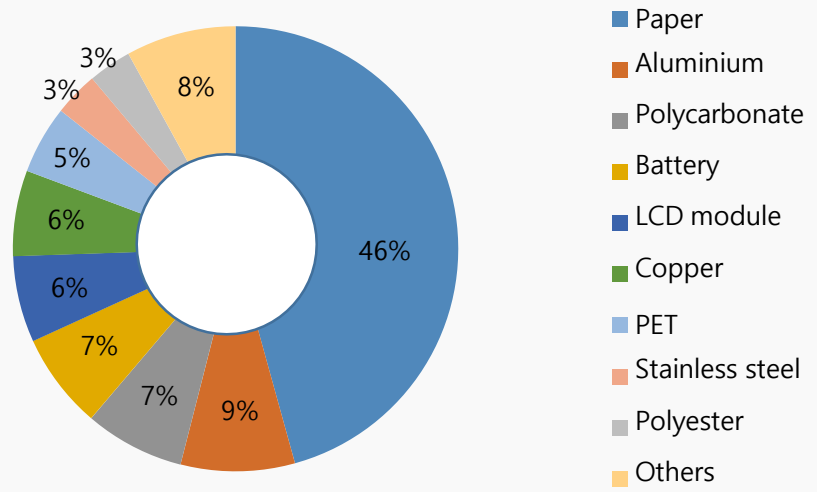
| | |
|---|---|
| **Pre-manufacturing** | Parts and materials constituting the products and its transportation (from supplier to Samsung factory) |
| **Manufacturing** | Product assembly by Samsung Electronics<br>(Data collection period : 3 months ahead of assessment) |
| **Distribution** | From China or Vietnam to United States |
| **Usage** | 2 years use |
| **Disposal** | Waste treatment of parts and material |

Critical review for Galaxy S6 LCA study was done by an expert from Korean Society for Life Cycle Assessment. (kslca@naver.com)
For the rest, it was done by internal expert in Global CS Center of Samsung Electronics. (ecodesign@samsung.com)

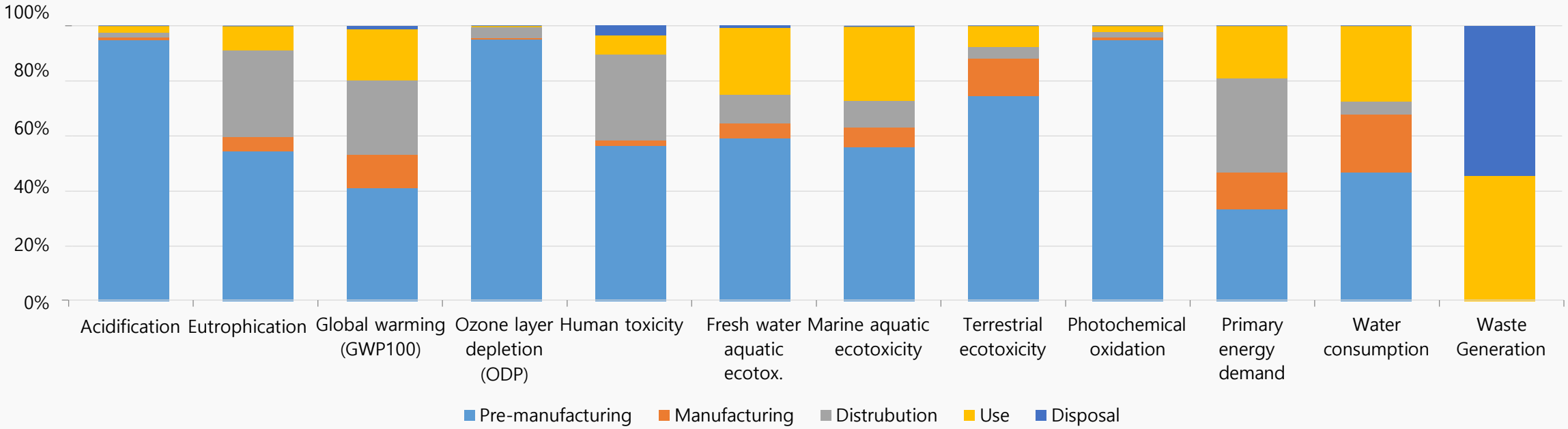
## Product Features

| | |
|---|---|
| **Model name** | SM-N950U (Galaxy Note8) |
| **Processor** | Qualcomm 2.35GHz, 1.9GHz Octa-Core 64bit |
| **Dimension** | 162.5 x 74.8 x 8.6 mm |
| **Display** | 6.3" 2960 x 1440, 16M In-Cell Touch LCD |
| **Battery** | Li-Ion 3300 mAh |
| **Camera** | 12 MP / 5MP |
| **Wt.(g)** | 186.34g |

## Material Use



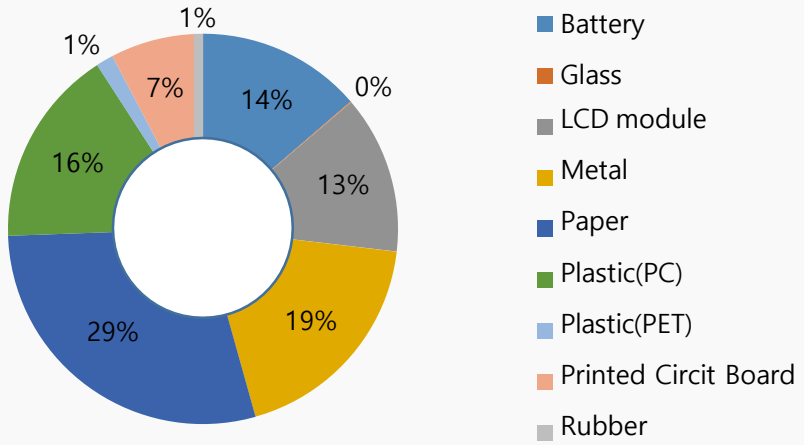

## Characterized Environment Impact



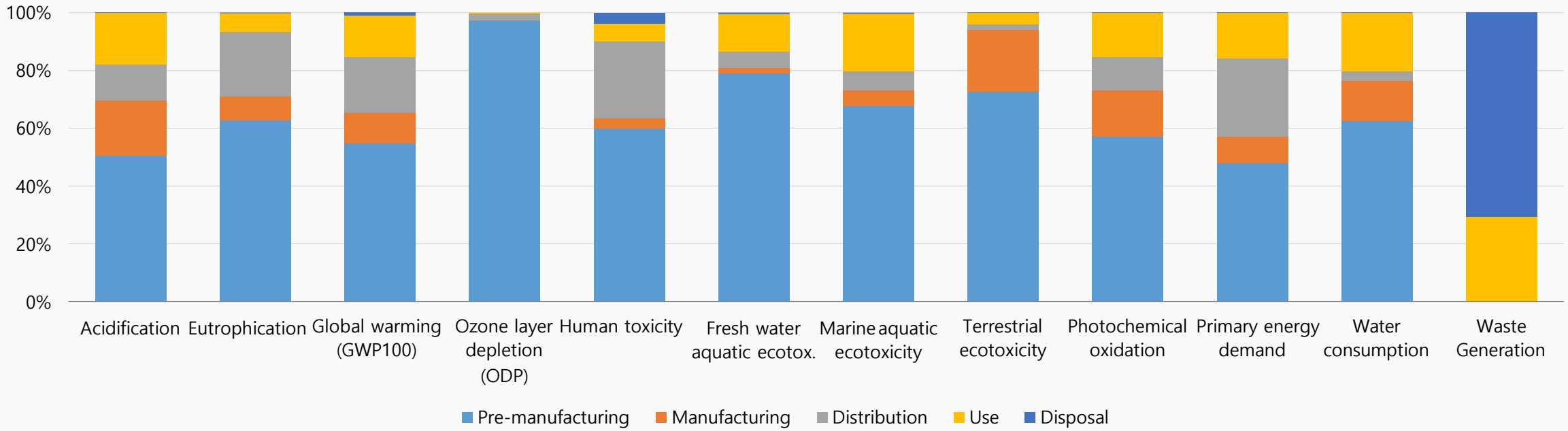
## Product Features

| | |
|---|---|
| **Model name** | SM-G5510 (Galaxy On5x) |
| **Processor** | Quad-Core1.4GHz |
| **Dimension** | 142.8 x 69.5 x 8.1 mm |
| **Display** | LCD 5" |
| **Battery** | Li-Ion 2600 mAh |
| **Camera** | 12 MP / 5MP |
| **Wt.(g)** | 149 g |

## Material Use



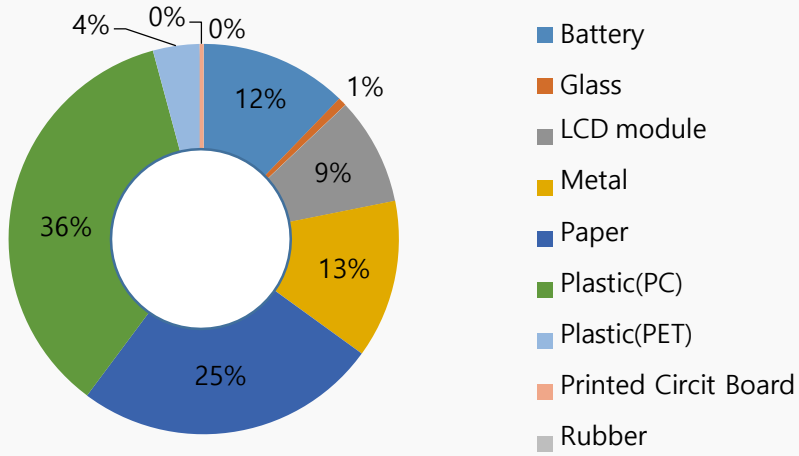

## Characterized Environment Impact



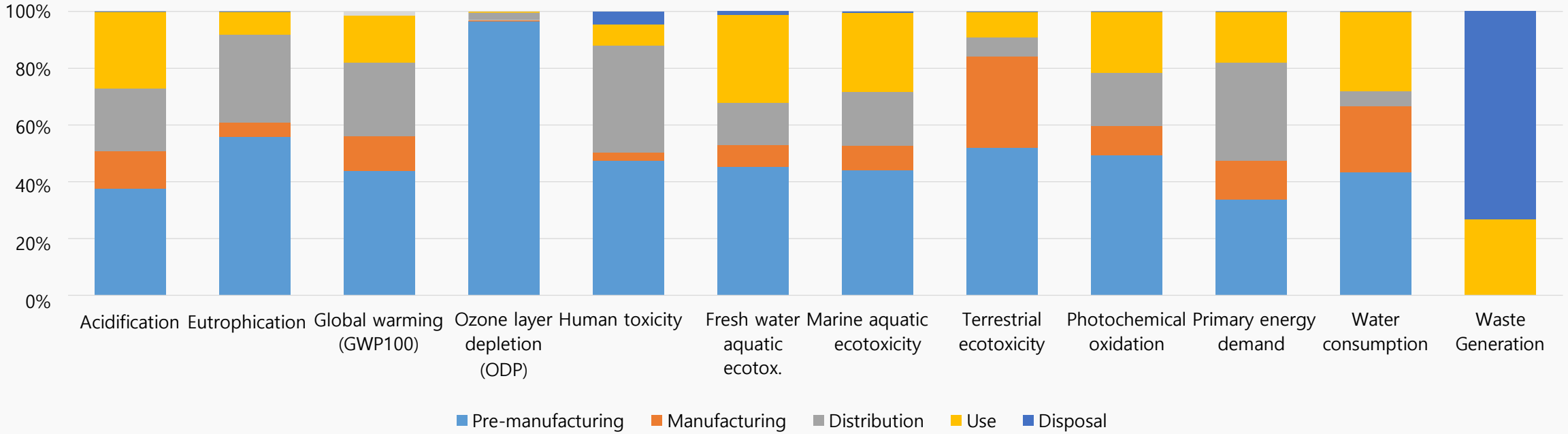
## Product Features


| | |
|---|---|
| **Model name** | SM-J120A (Galaxy J1x) |
| **Processor** | Quad-core 1.2 GHz |
| **Dimension** | 132.6 x 69.3 x 8.9 mm |
| **Display** | AMOLED 4.5” |
| **Memory** | microSD, up to 128 GB |
| **Battery** | Li-Ion 2050 mAh |
| **Camera** | 5 MP |
| **Wt.(g)** | 132 g |

## Material Use



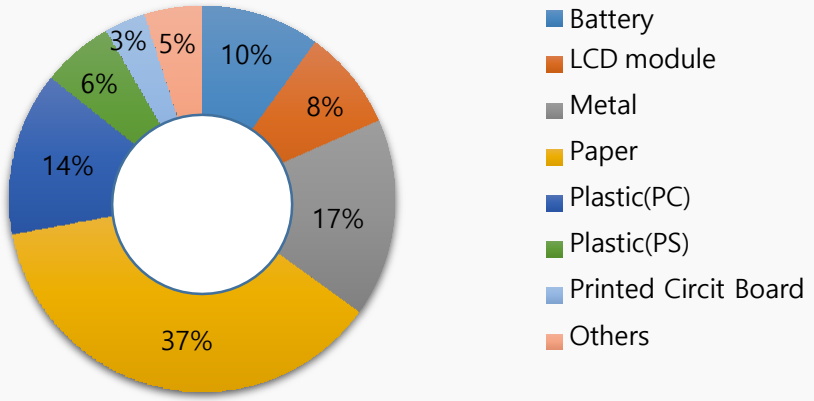

## Characterized Environment Impact



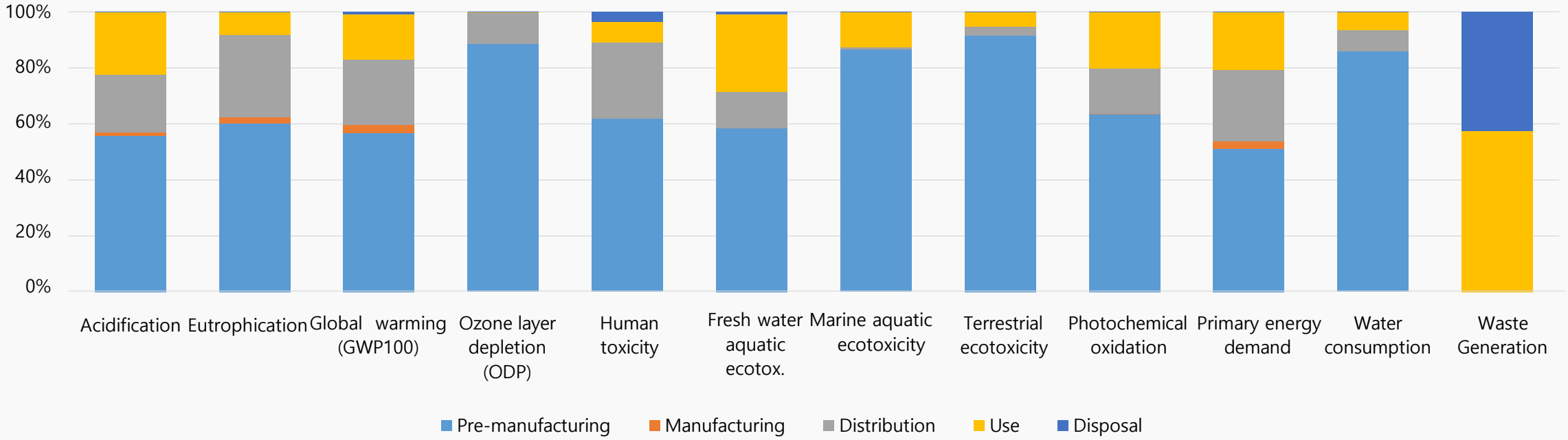
## Product Features

| | |
|---|---|
| **Model name** | SM-N920V (Galaxy Note5) |
| **Processor** | Octa-Core 2.1GHz, 1.5GHz |
| **Dimension** | 153.2 x 76.2 x 7.62 mm |
| **Display** | Super AMOLED 5.7〞 |
| **Memory** | 32GB, 4GB RAM |
| **Battery** | 3000mAh |
| **Camera** | Main : 16M pixel / Front : 5M pixel |
| **Wt.(g)** | Product : 192g / Packaging 259 g |

## Material Use



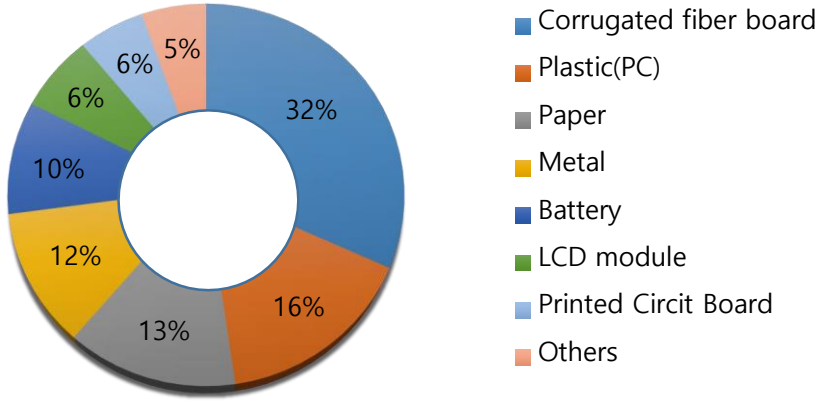

## Characterized Environment Impact



## Product Features

| | |
|---|---|
| Model name | SM-G920V (Galaxy S6) |
| Processor | Octa-Core 2.1GHz, 1.5GHz |
| Dimension | 143.4 x 70.5 x 6.8 mm |
| Display | Super AMOLED 5.1″ |
| Memory | 32GB |
| Battery | 2550mAh |
| Camera | Main : 16M pixel / Front : 5M pixel |
| Wt.(g) | Product : 138g / Packaging 261 g |

## Material Use




## Characterized Environment Impact