

# Scope 3 GHG Inventory Report

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## 1. Introduction

The calculation of BASF's Scope 3 emissions is based on the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, the Guidance for Accounting and Reporting Corporate GHG Emissions in the Chemical Sector Value Chain (WBCSD) and the Guidance on Scope 3.1 Calculation on Corporate Level (Together for Sustainability, The Product Carbon Footprint Guideline for the Chemical Industry, Chapter 4, Version 2.0 – November 2022). The Scope 3 emissions are calculated by category in accordance with the guidelines of the GHG Protocol Standard (at least “minimum boundaries”).

## 2. Descriptive information

| Descriptive information   | Company response  |
|---|---|
| <b>Company name</b>   | BASF  |
| <b>Description of the company</b>   | <p>At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition &amp; Care and Agricultural Solutions. BASF generated sales of €87.3 billion in 2022. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depository Receipts (BASFY) in the United States. Further information at <a href="http://www.basf.com">www.basf.com</a>.</p>   |
| <b>Chosen consolidation approach (equity share, operational control or financial control)</b>   | <p>The emissions of BASF SE subsidiaries that are fully consolidated in the Group financial statements in which BASF holds an interest of less than 100% are included in full. The emissions of proportionally consolidated joint operations are disclosed pro rata according to BASF's interest.</p>   |
| <b>Description of the businesses and operations included in the company's organizational boundary (Description of the inventory boundary, including an outline/description of the organizational (scope 1) boundaries of the reporting company)</b> | <p>BASF reports scope 1 and scope 2 emissions from all production sites of fully consolidated companies and proportionally consolidated joint operations worldwide. We do not report GHG emissions from mobile combustion and from facilities other than production and power plants. GHG emissions from equity-accounted joint ventures and equity-accounted associated companies as well as from subsidiaries and associated companies that are not financially consolidated due to immateriality are not included in BASF's scope 1 or scope 2 emissions. The GHG emissions from equity-accounted joint ventures and equity-accounted associated companies are reported in category 15 of scope 3 emissions.</p> <p>Scope 3 emissions are reported for all BASF Group companies included in the Consolidated Financial Statements on a full or proportional basis, unless stated otherwise. The emissions of joint operations are included pro rata, based on BASF's stake. Relevant scope 3 emissions categories (&gt; 1 million t CO<sub>2</sub> equivalents) that are part of BASF's Scope 3 emissions inventory are:</p> <ul style="list-style-type: none"> <li>• Category 1: Purchased goods &amp; services</li> <li>• Category 2: Capital goods</li> <li>• Category 3: Fuel- and energy-related activities (not incl. in Scope 1 or 2)</li> <li>• Category 4: Upstream transportation and distribution</li> <li>• Category 5: Waste in Operations</li> <li>• Category 9: Downstream transportation and distribution</li> </ul> |

|   |   |
|---|---|
|   | <ul style="list-style-type: none"> <li>• Category 11: Use of sold products</li> <li>• Category 12: End-of-life treatment of sold products</li> <li>• Category 15: Investments</li> </ul>  |
| <b>The reporting period covered</b>   | 01/01/2023 -12/31/2023  |
| <b>A list of scope 3 activities included in the inventory</b>   | <p>Category 1: Purchased goods &amp; services</p> <p>Category 2: Capital goods</p> <p>Category 3: Fuel- and energy-related activities (not incl. in Scope 1 or 2)</p> <p>Category 4: Upstream transportation and distribution</p> <p>Category 5: Waste generated in operations</p> <p>Category 6: Business travel</p> <p>Category 7: Employee commuting</p> <p>Category 8: Upstream leased assets</p> <p>Category 9: Downstream transportation and distribution</p> <p>Category 11: Use of sold products</p> <p>Category 12: End-of-life treatment of sold products</p> <p>Category 15: Investments</p>   |
| <b>A list of scope 3 activities excluded from the report with justification for their exclusion</b>                         | <p>Category 10 (Processing of sold products): BASF does not calculate and report GHG emissions from processing of sold products. This is the result of a thorough analysis and balancing of the different relevance criteria for Scope 3 emissions sources and the five accounting and reporting principles of the GHG Protocol standards by WRI and WBCSD. BASF produces a large variety of intermediate goods. This application diversity cannot be tracked reasonably, and reliable figures on a yearly basis are virtually impossible to obtain. These circumstances strongly compromise the reporting principles completeness, consistency, and accuracy (and feasibility), thereby not serving our business goal of reducing GHG emissions along the value chain. In addition, the WBCSD Chemical Sector Standard “Guidance for Accounting &amp; Reporting Corporate GHG Emissions in the Chemical Sector Value Chain” emphasizes that “chemical companies are not required to report Scope 3, category 10 emissions, since reliable figures are difficult to obtain, due to the diverse application and customer structure”.</p> <p>Category 13 (Downstream leased assets): Not relevant (about 5% of upstream leased assets according to BASF expert judgement).</p> <p>Category 14 (Franchises): Not relevant for BASF as we do not own or operate franchises.</p> <p>GHG emissions from BASF trading business are excluded.</p> |
| <b>Once a scope 3 base year has been established, the year chosen as base year and rationale for choosing the base year</b> | By 2030, we want to reduce our raw materials-related Scope 3.1 in relation to the purchasing volume specifically by 15% from the 2022 baseline. This does not initially include raw materials-related emissions from battery materials, which we intend to further expand in the coming years.  |

|   |  |
|---|--|
| <b>Once a base year has been established, scope 3 emissions in the base year</b>  | 1.58 kilograms of CO <sub>2</sub> equivalents per kilogram of raw material purchased |
| <b>Once a base year has been established, the chosen base year emissions recalculation policy and context for any significant emissions changes that trigger base year emissions recalculations</b> | No recalculation policy published yet.   |

### 3. Greenhouse gas emissions data

| Scopes and categories  | Metric tons CO <sub>2</sub> e | Percentage of scope 3 emissions |
|--|-------------------------------|---------------------------------|
| Scope 1: Direct emissions from owned/controlled operations   | 15,562,000                    | -                               |
| Scope 2, market-based <sup>1</sup> : Indirect emissions from the use of purchased electricity, steam, heating, and cooling | 2,289,000                     | -                               |
| Certificates sold to third parties (VCUs)  | 0                             | -                               |
| <b>Upstream scope 3 emissions</b>  |                               |                                 |
| Purchased goods and services   | 47,418,000                    | 56%                             |
| Capital goods  | 1,637,000                     | 2%                              |
| Fuel- and energy-related activities (not included in scope 1 or scope 2)   | 2,037,000                     | 2%                              |
| Upstream transportation and distribution   | 1,736,000                     | 2%                              |
| Waste generated in operations  | 1,088,000                     | 1%                              |
| Business travel  | 78,000                        | 0%                              |
| Employee commuting   | 173,000                       | 0%                              |
| Upstream leased assets   | 196,000                       | 0%                              |
| <b>Downstream scope 3 emissions</b>  |                               |                                 |
| Downstream transportation and distribution   | 1,301,000                     | 2%                              |
| Use of sold products   | 2,753,000                     | 3%                              |
| End-of-life treatment of sold products   | 24,067,000                    | 28%                             |
| Investments  | 2,851,000                     | 3%                              |

<sup>1</sup>The location-based Scope 2 emissions amount to 3,317,000 metric tons CO<sub>2</sub>e.

| Greenhouse gas emissions | CO <sub>2</sub>             |                               | CH <sub>4</sub>             |                               |
|--------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|
|                          | Metric tons CO <sub>2</sub> | Metric tons CO <sub>2</sub> e | Metric tons CH <sub>4</sub> | Metric tons CO <sub>2</sub> e |
| Scope 1 <sup>1</sup>     | 15,272,000                  | 15,272,000                    | 908                         | 25,000                        |
| Scope 2                  | 2,289,000 <sup>2</sup>      | 2,289,000 <sup>2</sup>        | -                           | -                             |

| Greenhouse gas emissions | N <sub>2</sub> O             |                               | HFCs             |                               |
|--------------------------|------------------------------|-------------------------------|------------------|-------------------------------|
|                          | Metric tons N <sub>2</sub> O | Metric tons CO <sub>2</sub> e | Metric tons HFCs | Metric tons CO <sub>2</sub> e |
| Scope 1 <sup>1</sup>     | 901                          | 239,000                       | 38               | 26,000                        |
| Scope 2                  | -                            | -                             | -                | -                             |

| Greenhouse gas emissions | PFCs             |                               | SF <sub>6</sub> |                               |
|--------------------------|------------------|-------------------------------|-----------------|-------------------------------|
|                          | Metric tons PFCs | Metric tons CO <sub>2</sub> e | Metric tons SF  | Metric tons CO <sub>2</sub> e |
| Scope 1 <sup>1</sup>     | 0                | 0                             | 0               | 0                             |
| Scope 2                  | -                | -                             | -               | -                             |

<sup>1</sup>Emissions of N<sub>2</sub>O, CH<sub>4</sub>, HFC and SF<sub>6</sub> have been translated into CO<sub>2</sub> emissions using the Global Warming Potential, or GWP factor. GWP factors are based on the Intergovernmental Panel on Climate Change (IPCC) 5<sup>th</sup> Assessment Report, 2014. HFC (hydrofluorocarbons) are calculated using the GWP factors of the individual components.

<sup>2</sup>Market-based approach. The location-based Scope 2 emissions amount to 3,317,000 metric tons CO<sub>2</sub>e.

#### 4. Biogenic carbon emissions

Scope 1 - Use of biomass: 112,000 metric tons CO<sub>2</sub>e.

Scope 3.12 - End-of-life treatment of sold products: 783,000 metric tons of CO<sub>2</sub>e.

## 5. Description of scope 3 methodologies and data used

| Information on methodologies and data used   | Description of the types and sources of data used to calculate emissions  | Description of the methodologies, allocation methods, and assumptions used to calculate emissions  |
|--|---|--|
| <b>Upstream scope 3 emissions</b>  |   |  |
| <p><b>Category 1</b></p> <p><b>Purchased goods and services</b></p>  | <p>Activity data (primary data):<br/>Quantity and monetary purchasing volume of the goods and services purchased in the reporting year were obtained from BASF internal business data management systems.</p> <p>Emissions factors:</p> <p>a) Raw materials and packaging: Cradle-to-gate emissions factors for raw materials are collected from our suppliers. Where supplier-specific data was not available, the emissions factors were obtained from commercially and publicly available data sources such as GaBi (Sphera), ecoinvent or industry association data.</p> <p>b) Technical goods &amp; services: Supply chain emissions factors for spending on products and services were obtained from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (indirect emissions from supply chain).</p> | <p>We calculated the GHG emissions of the raw materials we procured (including merchandise) by multiplying the quantities received by the cradle-to-gate emissions factors. The CO<sub>2</sub>e emissions factors used are either supplier-specific values, if available, or regional and technology-specific CO<sub>2</sub>e emissions factors from secondary databases. If no suitable PCF values could be found in the databases, the missing emissions factors were estimated using own data models or derived from the mean value of chemicals in the same chemical group. To calculate emissions from packaging, we determined the material compositions of the different packaging groups and then calculated the GHG emissions by multiplying the number of packaging items purchased by their respective cradle-to-gate emissions factors. GHG emissions from technical goods and services were calculated based on the monetary purchasing volume in the year under review by multiplying the amount of expenditure (adjusted for inflation and taking into account VAT) by the GHG conversion factors from the DEFRA 2014 Guidelines.</p> |
| <p><b>Description of the data quality of reported emissions*</b></p> <p><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b></p> |   | <p><b>Good</b></p> <p><b>12%</b></p>   |
| <p><b>Category 2</b></p> <p><b>Capital goods</b></p>   | <p>Activity data (primary data):<br/>Monetary purchasing volumes of capital goods purchased in the reporting year were obtained from BASF's internal business data management systems.</p> <p>Emissions factors (secondary data):<br/>Supply chain emissions factors for spending on capital goods were obtained from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (indirect emissions from supply chain)</p>   | <p>The GHG emissions associated with BASF's capital goods were estimated based on the following approach: All sub-segments of BASF's global Technical Procurement related to the sourcing of capital equipment were analyzed based on their monetary purchasing volume in the reporting year. Each sub-segment was assigned a corresponding SIC code since the DEFRA/DECC's conversion factors for greenhouse gas emissions are based on the standard classification system (SIC 2007). The amount of spending (with inflation adjustment and considering VAT) was then multiplied by the respective GHG conversion factor and subsequently added up to the total GHG emissions from capital goods.</p>  |

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| <b>Description of the data quality of reported emissions*</b><br><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> | <b>Fair</b><br><b>0%</b> |
|---|--------------------------|

|  |  |   |
|--|--|---|
| <b>Category 3</b><br><b>Fuel- and energy-related activities (not included in scope 1 or scope 2)</b> | <p>Activity data (primary data):<br/>The quantities of fuel and energy, i.e., electricity and steam purchased in the reporting year were obtained from BASF internal business data management systems.</p> <p>Emissions factors (secondary data):<br/>The cradle-to-gate emissions factors were obtained from the GaBi database. The grid related loss factor and the fuel shares of electricity generation were taken from IEA, International Energy Agency, Electricity Statistics (most recent year available).</p> | <p>The GHG emissions from the extraction, production and transportation of fossil fuels used for power and steam generation in BASF's owned (power) plants were determined by multiplying the amount of purchased fuels by their respective, region-specific cradle-to-gate CO<sub>2</sub>e emissions factors. The GHG emissions from the extraction, production and transport of fuels consumed in the generation of electricity and steam purchased by BASF in the reporting year were calculated as follows: The amount of primary energy was determined based on the amount of purchased electricity and steam and the respective fuel efficiencies. The share of the different fuel types of the total amount of primary energy was calculated for each region based on the fuel shares of electricity generation. The fuel shares were then multiplied by the respective region-specific CO<sub>2</sub>e emissions factors to result in the overall GHG emissions. Generation of electricity, steam, heating, and cooling consumed in a T&amp;D system: GHG emissions associated with losses of purchased electricity and steam were estimated based on our Scope 2 emissions and a grid-related loss factor. Generation of electricity and steam purchased by the reporting company and sold to end users is not applicable to BASF.</p> |
|  | <b>Description of the data quality of reported emissions*</b><br><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b>  | <b>Good</b><br><b>0%</b>  |

|   |                          |
|---|--------------------------|
| <b>Description of the data quality of reported emissions*</b><br><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> | <b>Good</b><br><b>0%</b> |
|---|--------------------------|

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| <b>Category 4</b><br><b>Upstream transportation and distribution</b> | <p>Activity data (primary data):<br/>Quantities, types of goods and regional split of purchase in the reporting year as well as origin and destination points, mode of transport and load factors were obtained from BASF internal business data management systems.</p> <p>Emissions factors (secondary data):<br/>The CO<sub>2</sub>e emissions factors used were taken from the GLEC Framework.</p> <p>For quantification of the GHG emissions from BASF's internal transports the emissions factors incorporated in the IT solution EcoTransIT World were used (<a href="http://www.ecotransit.org/">//www.ecotransit.org/</a>).</p> | <p>GHG emissions associated with the transport of raw materials purchased by BASF in the reporting year were calculated by multiplying the quantities of products procured by a transportation distance and by an emissions factor for the mode of transport. For large-volume raw materials (representing about 50% of the purchasing volume), the mode of transport and the transport distance were determined substance-specifically. For the remaining raw materials transportation distances of each region were estimated by logistics experts. For procured products in Europe, the modal split from a Cefic survey for chemical transports was used; for all other regions, only truck transport was assumed. The GHG emissions from BASF internal transports were calculated based on detailed transport data using the EcoTransIT World business solution. GHG emissions associated with the</p> |
|  | <b>Description of the data quality of reported emissions*</b><br><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b>  | <b>Good</b><br><b>0%</b>   |



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|--|---|--|
|  |   | <p>transportation of technical &amp; capital goods purchased by BASF were calculated based on an estimated weight for capital and technical goods derived from the monetary purchasing volume and an assumed material content. Weight of purchased packaging was calculated based on material composition. Only truck transportation was assumed for the transport of technical goods.</p>   |
| <b>Description of the data quality of reported emissions*</b>  |   | <b>Fair</b>  |
| <b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> |   | <b>0%</b>  |
| <b>Category 5</b><br><b>Waste generated in operations</b>  | <p>Activity data (primary data):<br/>The quantities of solid waste and wastewater generated during production at all BASF production sites were obtained from BASF's in-house EHS database. The data collection method differentiates between on-site and off-site disposal as well as between different disposal methods (waste incineration with and without energy recovery, landfill, physical recovery, wastewater treatment and others).</p> <p>Emissions factors (secondary data):<br/>The emissions factors were obtained from the GaBi database.</p> | <p>The GHG emissions from off-site waste incineration with energy recovery were calculated by multiplying the amount of waste in this category by a suitable CO<sub>2</sub>e emissions factor. The GHG emissions of off-site physical recovery (recycling) of waste was assessed following the cut-off approach in life cycle assessment. The GHG emissions from off-site waste incineration without energy recovery as well as from landfill disposal were calculated based on a carbon balance. It was assumed that all carbon contained in the waste is eventually converted to CO<sub>2</sub> during incineration or landfilling. Multiplying the amount of waste by the carbon content of the waste yields the waste's total carbon content which is then converted to the amount of emitted CO<sub>2</sub>.</p> <p>The GHG emissions from other solid waste disposal methods were calculated by multiplying the amount of waste with a landfill emissions factor for inert plastic waste. The CO<sub>2</sub>e emissions from non-BASF operated wastewater treatment plants were calculated based on a TOC (Total Organic Carbon) material balance. It is assumed that 30% of the influent organic carbon load is insoluble and inert, as well as the non-biodegradable TOC in the effluent. It is also assumed that 25% of the remaining bio-treatable TOC is converted into bio-sludge during biotreatment. The residual TOC, which is about 50% of the total influent TOC, is converted into CO<sub>2</sub>. The CO<sub>2</sub> emissions were calculated from the residual TOC with a conversion factor of CO<sub>2</sub>/TOC=3.67.</p> |
| <b>Description of the data quality of reported emissions*</b>  |   | <b>Good</b>  |
| <b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> |   | <b>0%</b>  |
| <b>Category 6</b><br><b>Business travel</b>  | <p>Activity data (primary data):<br/>Miles, kilometers, and tank-to-wheel (TTW) greenhouse gas emissions per means of transportation travelled by</p>   | <p>The GHG emissions associated with the transportation of all BASF Group employees for business-related activities were calculated as follows:</p>  |

BASF employees in the reporting year were directly reported by external partners (e.g., travel agencies) and provided to BASF's Travel Management.

Emissions factors (secondary data): CO<sub>2</sub>e conversion factors for short-haul, medium-haul and long-haul flights by flight class, including radiative forcing and fuel pre-chain emissions (well-to-tank) were taken from DEFRA's GHG Conversion Factors for Company Reporting (2023).

CO<sub>2</sub>e conversion factors for travel by train per rail type were taken from DEFRA's GHG Conversion Factors for Company Reporting (2023).

a) GHG emissions from business travel by air: Miles were converted to well-to-tank (WTT) CO<sub>2</sub> equivalents based on the conversion factors including radiative forcing per passenger class type in short-haul, medium-haul and long-haul flights. These WTT values were then combined with the reported TTW CO<sub>2</sub> equivalents to achieve a full life cycle analysis of GHG emissions generated from air travel.

b) GHG emissions from business travel by train: Rail miles were converted into WTT CO<sub>2</sub>e emissions, using railway specific CO<sub>2</sub>e conversion factor for travel by train. These WTT values were then combined with the reported TTW CO<sub>2</sub> equivalents to achieve a full life cycle analysis of GHG emissions generated from rail travel.

c) GHG emissions from business travel by car: External partners (i.e., car rental companies) provided a summary of kilometers driven and the resulting GHG emissions for the reporting year.

**Description of the data quality of reported emissions**

**Percentage of emissions calculated using data obtained from suppliers or other value chain partners**

**Good**

**5%**

**Category 7  
Employee commuting**

Activity data (primary data): Number of employees per region as well as distance and mode of transportation for a selected group of employees in Germany, who participated in a poll in 2017.

Emissions factors (secondary data): The CO<sub>2</sub>e emissions factors used for car, motorbike, and public transportation were taken from DEFRA's GHG Conversion Factors for Company Reporting (2023) for the regions Europe and Asia and EPA's Emission Factors for Greenhouse Gas Inventories (2023) for North and South America.

GHG emissions from employee commuting in Europe were calculated based on the results of a representative poll conducted among BASF SE employees in 2017. The share of employees working from home were calculated based on 14.5% for Germany and 12.3% for the rest of Europe (Source: WEF). GHG emissions were calculated by multiplying the travelled distance (202 days per year, back and forth) by the respective CO<sub>2</sub>e emissions factor accounting for the different means of transportation. The resulting GHG emissions were subsequently extrapolated to all BASF Group employees in Europe.

For North America, the calculations were based on Bureau of Transportation Statistics on principal means of transportation to work. It was assumed that employees travel 233 days per year and 30 kilometers one-way.

For Asia the calculation was based on data from Statista (Deskmag 2017 & McKinsey 2021) and assumes that employees travel 224 days per year and 30 kilometers one-way.

For South America, it was assumed that all employees travel 30 km by car (one-way) and 253 days per year. The corresponding emissions were calculated by multiplying the distance by the number of employees, number of working days and emissions factors per means of transportation.

|   |  |
|---|--|
| <p><b>Description of the data quality of reported emissions*</b></p> <p><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b></p>  | <p><b>Fair</b></p> <p><b>0%</b></p>  |
| <p><b>Category 8</b></p> <p><b>Upstream leased assets</b></p> <p>Activity data (primary data)</p> <p>Leased cars: Vehicle miles as defined in the leasing contracts for BASF SE employees in the reporting year.</p> <p>Leased office and storage space: Leased office and storage space for the reporting year was obtained from BASF internal business data management systems.</p> <p>Leased equipment: The monetary purchasing volume for leased equipment in the reporting year was derived from BASF internal business data management systems.</p> <p>Emissions factors (secondary data):</p> <p>The CO<sub>2</sub> emissions factors for leased cars were provided by the car manufacturers. They differentiate between fuel type (diesel/gasoline) as well as cubic capacity. For electric cars the electricity consumption of the models was taken from the manufacturer's specification.</p> <p>The energy consumption (electricity and heat energy) per square meter of office space and warehouses in Europe was taken from a study of the German Federal Ministry for Economic Affairs and Energy (BMW, 2015). For North America and South America, it was taken from the Commercial Buildings Energy Consumption Survey (EIA, 2018). For Asia, it was taken from a study by Ding et al., 2017.</p> <p>Region-specific CO<sub>2</sub> emissions factors per MWh were obtained from IEA, 2023.</p> <p>For assessing the GHG emissions from leased equipment the emissions factors were taken from the 2014 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting, Annex 13 (indirect emissions from supply chain).</p> | <p>GHG emissions from leased assets were calculated for three different categories.</p> <p>1) Leased cars: GHG emissions from cars leased by BASF SE were calculated by multiplying the vehicle miles travelled, which were derived from the respective leasing contracts, by the relevant CO<sub>2</sub> emissions factors. Since only the leasing contracts of BASF SE were evaluated, the resulting GHG emissions were subsequently extrapolated based on the number of employees to account for the entire BASF Group. Emissions from electric cars leased by the BASF Group were similarly extrapolated from BASF SE leasing data. The total electricity consumption of all electric cars leased by BASF SE was determined by multiplying the vehicle miles travelled with the respective vehicle model's electricity consumption. This electricity consumption was extrapolated to the BASF Group and then distributed to the four regions (Europe, Asia, North America, South America) based on the share of employees. For each region the electricity consumption was multiplied by a region-specific electricity emissions factor. The resulting GHG emissions per region were then added up to yield the total GHG emissions from leased electric vehicles.</p> <p>2) Leased offices and storage space: The GHG emissions from leased offices and storage space were assessed based on the leased space (in square meters) and the annual energy consumption per square meter of office and storage space, respectively. Only for Asia no distinction was made between office and storage space.</p> <p>3) Leased Equipment: The GHG emissions from leased equipment such as hardware (i.e., computers or printers) were assessed based on the monetary purchasing volume in the reporting year (with inflation adjustment and considering VAT) and the corresponding GHG conversion factors.</p> |
| <p><b>Description of the data quality of reported emissions*</b></p> <p><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b></p>  | <p><b>Fair</b></p> <p><b>0%</b></p>  |

| Information on methodologies and data used  | Description of the types and sources of data used to calculate emissions   | Description of the methodologies, allocation methods, and assumptions used to calculate emissions  |
|---|--|--|
| <b>Downstream scope 3 emissions</b>   |  |  |
| <b>Category 9</b><br><b>Downstream transportation and distribution</b>  | <p>Activity data (primary data):<br/>Quantities of product, origin and destination points, mode of transport and load factors were obtained from BASF internal business data management systems.</p> <p>Emissions factors (secondary data):<br/>The emissions factors incorporated in the IT solution EcoTransIT World were used (<a href="http://www.ecotransit.org/">//www.ecotransit.org/</a>).</p> | <p>For the calculation of the GHG emissions associated with the transport of BASF products sold in the reporting year, the respective shipments from BASF sites to BASF customers were evaluated using the EcoTransIT World business solution.</p>   |
| <b>Description of the data quality of reported emissions*</b><br><b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> |  | <p><b>Good</b></p> <p><b>0%</b></p>  |
| <b>Category 11</b><br><b>Use of sold products</b>   | <p>Activity data (primary data):<br/>Quantities and types of products sold in the reporting year were obtained from BASF internal business data management systems.</p> <p>Emissions factors (secondary data): not applicable. GWPs were taken from the Sixth Assessment Report, IPCC, 2021.</p>   | <p>Chemical products vary strongly in their GHG emissions during their use phase. Most chemical products neither cause nor prevent GHG emissions. For the calculation of the GHG emissions associated with the use of sold BASF products we only considered the direct use-phase emissions of sold products over their expected lifetime, i.e., the GHGs and products that contain or form GHGs that are emitted during use.</p> <p>1) GHG emissions from products sold in the reporting year that form greenhouse gases: Nitrogenous fertilizers release nitrous oxide (N<sub>2</sub>O) to the atmosphere because of microbial action in the soil. The associated GHG emissions were calculated based on the amount of N-containing fertilizers sold in the reporting year, the nitrogen content and on the fact that about 1% (in the presence of a nitrification inhibitor only 0.5%) of the nitrogen contained in the fertilizer is converted into N<sub>2</sub>O-N. CO<sub>2</sub> from the use of urea (as fertilizer and diesel exhaust liquid) and from carbonates (used as leavening agent) was calculated based on the sold product quantity and the contained CO<sub>2</sub> amount.</p> <p>2) GHG emissions from products sold in the reporting year that contain greenhouse gases such as dry ice, CO<sub>2</sub> as gas for the beverage industry and HFCs as foaming agents to produce polyurethane foams: GHG emissions from dry ice and CO<sub>2</sub> sold to the beverage industry were considered based on the sold quantity. GHG emissions from HFCs were calculated based on the procured HFC-</p> |

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| <p><b>Description of the data quality of reported emissions*</b><br/> <b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b></p> |   | <p>quantities and the loss rate of HFCs in the polyurethane foams during their use phase (100% over the entire life cycle).</p> <p><b>Good</b></p> <p><b>0%</b></p>  |
| <p><b>Category 12</b><br/> <b>End-of-life treatment of sold products</b></p>   | <p>Activity data (primary data):<br/> Quantity of products sold in the reporting year in the different regions and their carbon content were obtained from BASF internal business data management systems.</p> <p>The ratio of the different waste disposal methods (incineration, landfill, recycling) in each country/region was derived from data on municipal waste treatment provided by Eurostat (2020), OECD statistics (2017, 2018), the Indian Central Pollution Control Board (2020, 2021), and the Chinese National Bureau of Statistics (2022). The following shares of waste disposal methods were used for the different regions:<br/> Europe: 34% incineration (99% thereof with energy recovery), 29% landfilling, 37% recycling; North America: 12% incineration with energy recovery, 61% landfilling, 27% recycling; Asia: 72% incineration (23% thereof with energy recovery), 20% landfilling, 8% recycling; South America: over 99% landfilling and less than 1% incineration or recycling.</p> | <p>GHG emissions from the disposal of all BASF products (except the products that are already decomposed or during their use phase and accounted for in Category 11) sold in the reporting year were calculated presuming that these products at the end of their lives are either disposed of by landfilling or incineration or recycled. It was assumed that the products would be used and disposed of in the countries to which BASF sold them.</p> <p>The amount of GHG emissions was calculated separately for each region and end-of-life method. Recycling was assessed using the cut-off approach in life cycle assessment. The emissions from landfilling and incineration were calculated based on a carbon balance. It was assumed that all carbon contained in the products is eventually converted to CO<sub>2</sub> after disposal. The total amount of disposed carbon going into landfilling was determined by multiplying the region's landfilling share by the materials' carbon content. This amount of disposed carbon was then converted into the amount of emitted CO<sub>2</sub> from landfilling. The same method was applied to determine the emissions from incineration.</p> <p>Incineration with energy recovery was considered proportionately in Europe, North America and Asia. Thus, a proportion of the calculated emissions from waste incineration in these three regions were allocated to energy generation. For this, the heating value methodology was used by assessing the energy content of the BASF products that are incinerated at the end of their lives. Under the assumption that the efficiency of steam generation is 75% and the incineration plant requires 25% of the steam for its own power requirements, the produced net steam was determined. In accordance with the Guidance for Accounting &amp; Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, the total emissions from incineration with energy recovery was then allocated to the waste treatment and the energy generation by using an economic allocation approach based on the proportions of total costs of waste</p> |

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|  |  | treatment and total revenues from the sale of generated steam and electricity.  |
| <b>Description of the data quality of reported emissions*</b>  |  | <b>Good</b>   |
| <b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> |  | <b>0%</b>   |
| <b>Category 15 Investments</b>   | Activity data (primary data): Scope 1 and scope 2 emissions of BASF's equity-accounted associated companies and joint ventures were obtained from the respective companies upon inquiry. | GHG emissions from equity-accounted joint ventures and equity-accounted associated companies are not included in BASF's scope 1 or scope 2 emissions. The GHG emissions from these companies are evaluated on a regular basis by inquiring these data from the respective companies. GHG emissions were calculated based on BASF's equity share in these companies, but only from non-consolidated companies of which BASF holds a minimum interest of 20%. |
| <b>Description of the data quality of reported emissions*</b>  |  | <b>Good</b>   |
| <b>Percentage of emissions calculated using data obtained from suppliers or other value chain partners</b> |  | <b>100%</b>   |

\* Subjective evaluation of the data quality of the direct emissions data, activity data, and emissions factors. The type of evaluation according to the criteria (Technology, Time, Geography, Completeness, and Reliability) is based on the GHG Protocol Scope 3 standard (page 77).