

When factoring heat generation required for the manufacturing and transportation of products, *Greenhouse gas emissions attributable to products, from food to sneakers to appliances, make up more than 75% of global emissions.* [The Carbon Catalogue](#)

The data, which is publicly available on [nature.com](#), contains product carbon footprints (PCFs) for various companies. PCFs are the greenhouse gas emissions attributable to a given product, measured in CO<sub>2</sub> (carbon dioxide equivalent).

Let's find out the number of unique companies and their total carbon footprint PCF for each industry group, filtering for the most recent year in the database.

product\_emissions

| field                        | data type |
|------------------------------|-----------|
| id                           | VARCHAR   |
| year                         | INT       |
| product_name                 | VARCHAR   |
| company                      | VARCHAR   |
| country                      | VARCHAR   |
| industry_group               | VARCHAR   |
| weight_kg                    | NUMERIC   |
| carbon_footprint_pcf         | NUMERIC   |
| upstream_percent_total_pcf   | VARCHAR   |
| operations_percent_total_pcf | VARCHAR   |
| downstream_percent_total_pcf | VARCHAR   |

 Projects Data    DataFrame as   carbon\_emissions\_by\_industry

```
SELECT *
FROM product_emissions
LIMIT 5;
```

| ▼ | id           | ▼ | year | ▼ | product_name                     | ▼ | company              | ▼ | country | ▼ | indust |
|---|--------------|---|------|---|----------------------------------|---|----------------------|---|---------|---|--------|
| 0 | 10056-1-2014 |   | 2014 |   | Frosted Flakes(R) Cereal         |   | Kellogg Company      |   | USA     |   | Food,  |
| 1 | 10056-1-2015 |   | 2015 |   | Frosted Flakes, 23 oz, produc... |   | Kellogg Company      |   | USA     |   | Food   |
| 2 | 10222-1-2013 |   | 2013 |   | Office Chair                     |   | KNOLL INC            |   | USA     |   | Capit  |
| 3 | 10261-1-2017 |   | 2017 |   | Multifunction Printers           |   | Konica Minolta, Inc. |   | Japan   |   | Techr  |
| 4 | 10261-2-2017 |   | 2017 |   | Multifunction Printers           |   | Konica Minolta, Inc. |   | Japan   |   | Techr  |

5 rows   

 Projects Data    DataFrame as   df

```
SELECT industry_group, COUNT(DISTINCT company) AS num_companies,
ROUND(SUM(carbon_footprint_pcf), 1) AS total_industry_footprint
FROM product_emissions
WHERE year IN (SELECT MAX(year) FROM product_emissions)
GROUP BY industry_group
ORDER BY total_industry_footprint DESC;
```

|   | ▼ industry_group ▼                 | num_companies |
|---|------------------------------------|---------------|
| 0 | Materials                          |               |
| 1 | Capital Goods                      |               |
| 2 | Technology Hardware & Equipment    |               |
| 3 | Food, Beverage & Tobacco           |               |
| 4 | Commercial & Professional Services |               |
| 5 | Software & Services                |               |

6 rows [↓](#)