SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: Benzoic acid
Cat No. : 423475000; 423470000; 423470020; 423470250
Synonyms Benzenecarboxylic acid; Benzenemethanoic acid; Phenylcarboxylic acid; Phenylformic acid; Benzeneformic acid; Carboxybenzene
CAS-No 65-85-0
EC-No. 200-618-2
Molecular Formula C7 H6 O2
Reach Registration Number -

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category PC21 - Laboratory chemicals
Process categories PROC15 - Use as a laboratory reagent
Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company
UK entity/business name Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom

EU entity/business name Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Based on available data, the classification criteria are not met
SAFETY DATA SHEET

Benzoic acid

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2.2. Label elements

Signal Word Danger

Hazard Statements
H315 - Causes skin irritation
H318 - Causes serious eye damage
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

May form combustible dust concentrations in air

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>65-85-0</td>
<td>EEC No. 200-618-2</td>
<td>&gt;95</td>
<td>Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT RE 1 (H372)</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Benzoic acid

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Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Ingestion
Do not induce vomiting. Obtain medical attention.

Inhalation
Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

Self-Protection of the First Aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Causes eye burns.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician
Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Dust can form an explosive mixture in air. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with the skin and the eyes.
6.2. Environmental precautions
See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

6.4. Reference to other sections
Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Avoid dust formation. Do not breathe dust.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities
Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition.

7.3. Specific end use(s)
Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Exposure limits
List source(s):

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Derived No Effect Level (DNEL) Workers

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Acute effects (local)</th>
<th>Acute effects (systemic)</th>
<th>Chronic effects (local)</th>
<th>Chronic effects (systemic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Dermal</td>
<td></td>
<td></td>
<td>4.5 mg/kg</td>
<td>34.7 mg/kg</td>
</tr>
</tbody>
</table>

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Inhalation

Predicted No Effect Concentration (PNEC)

<table>
<thead>
<tr>
<th>Environment</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>0.34 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>1.75 mg/kg dw</td>
</tr>
<tr>
<td>Marine water</td>
<td>0.034 mg/l</td>
</tr>
<tr>
<td>Marine water sediment</td>
<td>0.175 mg/kg dw</td>
</tr>
<tr>
<td>Water Intermittent</td>
<td>0.331 mg/l</td>
</tr>
<tr>
<td>Microorganisms in sewage treatment</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Soil (Agriculture)</td>
<td>0.151 mg/kg dw</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

No information available.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off-white</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>aromatic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>2.5-3.5</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>121 - 123 °C / 249.8 - 253.4 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>249 °C / 480.2 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>121 °C / 249.8 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>Lower 1.4</td>
</tr>
<tr>
<td></td>
<td>Upper 8.2</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>1.3 hPa @ 96 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity / Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>No data available</td>
</tr>
<tr>
<td>Component</td>
<td>Benzoic acid</td>
</tr>
<tr>
<td>log Pow</td>
<td>1.9</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>570 °C / 1058 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Formula</td>
<td>C7 H6 O2</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>122.12</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: Aqueous solution, May react with metals and lead to the formation of flammable hydrogen gas.

10.4. Conditions to avoid

Incompatible products. Avoid dust formation.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;
   Oral
   Based on available data, the classification criteria are not met
   Dermal
   Based on available data, the classification criteria are not met
   Inhalation
   Based on available data, the classification criteria are not met

<table>
<thead>
<tr>
<th>Component</th>
<th>LD₅₀ Oral</th>
<th>LD₅₀ Dermal</th>
<th>LC₅₀ Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>1700 mg/kg (Rat)</td>
<td>2565 mg/kg (Rat)</td>
<td>LD₅₀ &gt; 10000 mg/kg (Rabbit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC₅₀ &gt; 12.2 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LC₅₀ &gt; 26 mg/m³ (Rat) 1 h</td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation;
   Observational endpoint
   Category 2
   Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

(c) serious eye damage/irritation;
   Category 1

(d) respiratory or skin sensitization;
   Respiratory
   Based on available data, the classification criteria are not met
   Skin
   Based on available data, the classification criteria are not met
   No information available

(e) germ cell mutagenicity;
   Based on available data, the classification criteria are not met
   Not mutagenic in AMES Test

(f) carcinogenicity;
   Based on available data, the classification criteria are not met
   There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;
   Based on available data, the classification criteria are not met

(h) STOT-single exposure;
   Based on available data, the classification criteria are not met

(i) STOT-repeated exposure;
   Category 1
   Route of exposure
   Inhalation
   Target Organs
   Lungs.

(j) aspiration hazard;
   Not applicable
   Solid

Other Adverse Effects
   The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information

Symptoms / effects, both acute and
   No information available
SAFETY DATA SHEET

Benzoic acid

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Fish</th>
<th>Water Flea</th>
<th>Freshwater Algae</th>
<th>Microtox</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>LC50: = 180 mg/L, 96h (Gambusia affinis)</td>
<td>EC50: = 300 mg/L, 24h (Daphnia magna)</td>
<td>EC50: = 860 mg/L, 48h (Anabaena inaequalis)</td>
<td>EC50 = 16.85 mg/L 30 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC50: = 5 mg/L, 3h (Daphnia magna)</td>
<td>Static (Daphnia magna)</td>
<td>EC50 = 16.9 mg/L 15 min</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
Readily biodegradable

Persistence
Soluble in water, Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential
Bioaccumulation is unlikely

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>1.9</td>
<td>No data available</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
The product is water soluble, and may spread in water systems Is predicted to have low mobility in the environment: Highly mobile in soils

12.5. Results of PBT and vPvB assessment
Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

12.6. Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant
This product does not contain any known or suspected substance

Ozone Depletion Potential
This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues / Unused Products
Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging
Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC)
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information
Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not dispose of waste into sewer.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO
Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
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ADR

Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA

Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards
No hazards identified

14.6. Special precautions for user
No special precautions required

14.7. Transport in bulk according to
Not applicable, packaged goods
Annex II of MARPOL73/78 and the
IBC Code

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

X = listed.

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>200-618-2</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-0269 6</td>
</tr>
</tbody>
</table>

National Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Germany - Water Classification (VwVwS)</th>
<th>Germany - TA-Luft Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid</td>
<td>WGK 1</td>
<td></td>
</tr>
</tbody>
</table>

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3
H318 - Causes serious eye damage
H315 - Causes skin irritation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

Legend
### SAFETY DATA SHEET

**Benzoic acid**

<table>
<thead>
<tr>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS</td>
</tr>
</tbody>
</table>

**Training Advice**

- Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
- Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
- First aid for chemical exposure, including the use of eye wash and safety showers.

**Creation Date** 01-May-2012  
**Revision Date** 07-Mar-2019  
**Revision Summary** Not applicable.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**