SAFETY DATA SHEET
BENZOIC ACID
REVISION 5, DATE 14 NOV 2022

1. IDENTIFICATION

Product Name	**Benzoic acid**
Other Names	No Data Available
Uses	Formulation of pharmaceutical, food, cosmetics/personal care products and aromatic applications. Agricultural use. Use as an intermediate and as an auxiliary for polymerization.
Chemical Family	No Data Available
Chemical Formula	C7H6O2
Chemical Name	Benzoic acid
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Not Scheduled

Globally Harmonised System

Hazard Classification			Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories			Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 1 Specific Target Organ Toxicity (Repeated Exposure) - Category 1 Specific Target Organ Toxicity (Single Exposure) - Category 3
Pictograms			
Signal Word			Danger
Hazard Statements		**H315**	Causes skin irritation.
		H318	Causes serious eye damage.
		H335	May cause respiratory irritation.
		H336	May cause drowsiness or dizziness.
		H372	Causes damage to organs through prolonged or repeated exposure.
Precautionary Statements	Prevention	**P280**	Wear protective gloves/eye protection/face protection.
		P260	Do not breathe dust/fume/gas/mist/vapours/spray.
		P270	Do not eat, drink or smoke when using this product.
		P264	Wash exposed skin thoroughly after handling.
	Response	**P302 + P352**	IF ON SKIN: Wash with plenty of water.
		P332 + P313	If skin irritation occurs: Get medical attention.
		P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
		P314	Get medical attention if you feel unwell.
		P362 + P364	Take off contaminated clothing and wash it before reuse.
		P314	Get medical attention if you feel unwell.
	Disposal	**P501**	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Benzoic acid	C7H6O2	65-85-0	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. Get immediate medical advice/attention. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Suitable emergency eye wash facility should be immediately available. Immediately call a Poison Centre or doctor/physician for advice. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Get immediate medical attention!
Skin	IF ON SKIN: Wash with plenty of soap and water while removing all contaminated clothes and shoes. Wash contaminated clothing and shoes before reuse. If skin irritation or rash occurs, get medical advice/attention. Suitable emergency safety shower facility should be immediately available.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms, Call a Poison Centre or doctor/physician for advice. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.
Advice to Doctor	Get immediate medical advice/attention if you feel unwell. Treat symptomatically. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident is recommended. * Most important symptoms and effects, both acute and delayed: No information available. * Indication of any immediate medical attention and special treatment needed: No information available.
Medical Conditions Aggravated by Exposure	May cause allergic reactions in certain individuals! Inhalation of dust may result in sensitization with allergic manifestations in predisposed persons.

5. FIRE FIGHTING MEASURES

General Measures	Do not attempt to take action without suitable protective equipment! If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Product is not flammable; May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), alcohol-resistant foam or water spray for extinction - Do not use High volume water jet.
Fire and Explosion Hazard	Avoid generating dust; Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Hazardous Products of Combustion	Fire/Thermal decomposition can lead to release of irritating and toxic gases and vapours, such as phenol, benzene, carbon monoxide, carbon dioxide.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation, especially in confined areas. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid generating dust. Do not breathe dust/mist/gas/vapours and avoid contact with eyes, skin and clothing.
Clean Up Procedures	Mechanically recover the product. Sweep or shovel spills into appropriate container for disposal (see SECTION 13). Avoid creating dusty conditions and prevent wind dispersal. Use non-sparking tools.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
Decontamination	Ventilate spillage area.
Environmental Precautionary Measures	Avoid release to the environment. Do not flush into surface water or sewer system. If contamination of sewers or waterways has occurred advise local emergency services.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Do not attempt to take action without suitable protective equipment (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Avoid formation of dust and aerosols. Do not breathe dust/mist/gas/vapours and avoid contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed - check regularly for spills. Protect from moisture. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from food/feedstuffs and incompatible materials (see SECTION 10). Store locked up and out of reach of children.
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Use explosion-proof electrical/ventilating/lighting equipment.
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or if, determined by a risk assessment, an inhalation risk exists. Recommended: Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 or P3 respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles or Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards. - Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. Butyl rubber (0.5 mm), nitrile rubber (0.35 mm), PVC (0.5 mm), neoprene (0.5 mm), Viton (0.4 mm). - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective work clothing, e.g. Overalls, safety shoes.
Special Hazards Precaustions	Avoid release to the environment.

Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Scaly or needle-like crystals
Odour	Odourless or with a slight benzaldehyde odour
Colour	White
pH	2.8 (saturated solution at 25 °C)
Vapour Pressure	0.0011 hPa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	249 °C
Melting Point	122 °C
Freezing Point	No Data Available
Solubility	Soluble in water (3.5 g/l) 25°C
Specific Gravity	1.27 - 1.321
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	1.27 - 1.321 g/cm3
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	1.88 (log Pow)
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Avoid generating dust; Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Product is not flammable; May burn but does not ignite readily.

Reactions That Release Gases or Vapours	Fire/Thermal decomposition can lead to release of irritating and toxic gases and vapours, such as phenol, benzene, carbon monoxide, carbon dioxide.
Release of Invisible Flammable Vapours and Gases	In aqueous solution, contact with metals may evolve flammable hydrogen gas!

10. STABILITY AND REACTIVITY

General Information	The product is non-reactive under normal conditions of use, storage and transport.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid generating dust. Keep away from heat and sources of ignition.
Materials to Avoid	Incompatible/reactive with strong oxidising agents, reducing agents, bases, moisture, metal.
Hazardous Decomposition Products	Fire/Thermal decomposition can lead to release of irritating and toxic gases and vapours, such as phenol, benzene, carbon monoxide, carbon dioxide.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: Based on available data, the classification criteria are not met. May be harmful if swallowed. Ingestion of large amounts may cause nausea and vomiting.
- Skin corrosion/irritation: Causes skin irritation. Mild skin irritation (Rabbit, 24 h) [Draize Test].
- Eye damage/irritation: Causes serious eye damage (redness and pain). Causes eye burns! Severely irritating (Rabbit) [OECD 405].
- Respiratory/skin sensitisation: Not a (skin) sensitiser [NICNAS]. May cause allergic reactions in certain individuals. Inhalation of dust may result in sensitization with allergic manifestations in predisposed persons.
- Germ cell mutagenicity: Not considered mutagenic or clastogenic [NICNAS]. Negative [OECD 487, 475].
- Carcinogenicity: Based on available data, the classification criteria are not met. Not considered carcinogenic [NICNAS]. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- Reproductive toxicity: Based on available data, the classification criteria are not met. No evidence of reproductive or developmental toxicity [NICNAS].
- STOT (single exposure): Based on available data, the classification criteria are not met. Overexposure by inhalation may cause respiratory irritation (coughing).
- STOT (repeated exposure): Causes damage to lungs through prolonged or repeated inhalation exposure. Available evidence from animal studies indicate that repeated or prolonged exposure to this material could also result in effects on the liver and kidneys.
- Aspiration toxicity: No information available.

Information on likely routes of exposure:
- Ingestion: No information available.
- Eye contact: Causes serious eye damage.
- Skin contact: Causes skin irritation.
- Inhalation: Causes damage to organs(lungs) through prolonged or repeated exposure(Inhalation).

Chronic effects: Causes damage to organs(lungs) through prolonged or repeated exposure(Inhalation).

Acute

Ingestion	Acute toxicity (Oral): - LD50, Rats: 2,565 mg/kg bw. [NICNAS]. - LD50, Mice: 2,250 mg/kg bw. [NICNAS].
Other	Acute toxicity (Dermal): - LD50, Rats: >2,000 mg/kg bw. [NICNAS].
Inhalation	Acute toxicity (Inhalation): - LC50, Rats: >12.2 mg/L (4 h) [NICNAS].

Chronic

Inhalation	Repeated dose toxicity (Inhalation): - NOAEC, Rat (systemic effects): >0.25 mg/L (6 h/d) [NICNAS].

Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish: 47.3 mg/L (96 h) [EPA-660/3-75-001]. - NOEC, Fish: >120 mg/L (28 d) [OECD 204]. - EC50, Crustacea (Daphnia magna): >100 mg/L (48 h) [EPA-660/3-75-009]. - NOEC, Crustacea (Daphnia magna): >25 mg/L (21 d) [OECD 211]. - ErC50, Algae: >33.1 mg/L (72 h) [OECD 201]. - IC50, Microorganisms: >1,000 mg/L (3 h) [OECD 209].
Persistence/Degradability	Readily biodegradable.
Mobility	Calculated Koc: 15.49
Environmental Fate	Slightly hazardous for water - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. *Must not reach sewage water or drainage ditch undiluted or unneutralised!
Bioaccumulation Potential	Bioaccumulation is not expected due to log Kow. Log Pow: 1.88
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container to a licensed disposal company and in accordance with local/regional/national regulations. *Controlled biodegradation in waste water treatment is possible.
Special Precautions for Land Fill	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Benzoic acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Benzoic acid

Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	Benzoic acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)
US DOT

Proper Shipping Name	Benzoic acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport
IMDG Code

Proper Shipping Name	Benzoic acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport
IATA DGR

Proper Shipping Name	Benzoic acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information	BENZOIC ACID (excluding its salts and derivatives) is listed in the SUSMP in Schedule 5: in preparations for agricultural use except preparations containing 1% or less of benzoic acid.
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002503 - Additives Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020

National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	200-618-2
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Not Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed

USA (TSCA)	Listed
Mexico (INSQ)	Listed

16. OTHER INFORMATION

Related Product Codes	BEACID1000, BEACID1001, BEACID1002, BEACID1003, BEACID1004, BEACID1005, BEACID1006, BEACID1007, BEACID1008, BEACID1009, BEACID1010, BEACID1011, BEACID1012, BEACID1013, BEACID1014, BEACID1015, BEACID1016, BEACID1017, BEACID1018, BEACID1200, BEACID1500, BEACID1501, BEACID1800, BEACID1801, BEACID1802, BEACID2000, BEACID2100, BEACID2500, BEACID2501, BEACID2502, BEACID2503, BEACID2504, BEACID2505, BEACID2506, BEACID2507, BEACID2508, BEACID2509, BEACID2510, BEACID2511, BEACID2512, BEACID2513, BEACID2514, BEACID2515, BEACID2516, BEACID2517, BEACID2518, BEACID2519, BEACID2520, BEACID2521, BEACID2522, BEACID2523, BEACID2524, BEACID2525, BEACID2526, BEACID3000, BEACID3001, BEACID3002, BEACID3500, BEACID3600, BEACID4000, BEACID4500, BEACID5000, BEACID5500, BEACID6000, BEACID6001, BEACID6100, BEACID6300, BEACID6301, BEACID6302, BEACID6303, BEACID6304, BEACID6305, BEACID6500, BEACID7000, BEACID7001, BEACID7300, BEACID7400, BEACID7500, BEACID7700, BEACID7701, BEACID7702, BEACID7703, BEACID7705, BEACID7706, BEACID7708, BEACID7800, BEACID7900, BEACID8000, BEACID8500, BEACID9000, BEACID9200
Revision	5
Revision Date	14 Nov 2022
Reason for Issue	update sds
Key/Legend	< Less Than > Greater Than **AICS** Australian Inventory of Chemical Substances **atm** Atmosphere **CAS** Chemical Abstracts Service (Registry Number) **cm^2** Square Centimetres **CO2** Carbon Dioxide **COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius **EPA (New Zealand)** Environmental Protection Authority of New Zealand **deg F (°F)** Degrees Farenheit **g** Grams **g/cm^3** Grams per Cubic Centimetre **g/l** Grams per Litre **HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other. **inHg** Inch of Mercury **inH2O** Inch of Water **K** Kelvin **kg** Kilogram **kg/m^3** Kilograms per Cubic Metre **lb** Pound **LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. **LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. **ltr** or **L** Litre **m^3** Cubic Metre **mbar** Millibar **mg** Milligram **mg/24H** Milligrams per 24 Hours **mg/kg** Milligrams per Kilogram **mg/m^3** Milligrams per Cubic Metre **Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present. **mm** Millimetre **mmH2O** Millimetres of Water **mPa.s** Millipascals per Second

N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight