SAFETY DATA SHEET

Revision date: 23-Nov-2022

Revision Number 7

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name BENZALDEHYDE NF/FCC

Product Code(s) 000000030184

Other means of identification

UN number 1990

CAS No. 100-52-7

Synonyms Benzaldehyde, Natural; Benzoic aldehyde; Phenylmethanal; Benzene carbonal; Benzenecarboxaldehyde; AABEN00002; AABEN79000

Recommended use of the chemical and restrictions on use

Recommended use Aromatic chemical

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier
Ixom Operations Pty Ltd (Bronson & Jacobs division) - incorporated in Australia
Street Address: 166 Totara Street
Mt Maunganui South
New Zealand

Telephone Number: +64 9 309 2528
Facsimile: +64 9 0508 366 364

For further information, please contact

Contact Point Product Safety Department

Emergency telephone number

Emergency Telephone **0 800 734 607 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on Land; DANGEROUS GOODS.

Classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

GHS Classification

SIGNAL WORD
Warning

Approval Number: HSR001395

Flammable liquids	Category 4
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Serious eye damage/eye irritation	Category 2
Acute aquatic toxicity	Category 2

Label elements

Hazard statements
H227 - Combustible liquid
H302 - Harmful if swallowed
H332 - Harmful if inhaled
H319 - Causes serious eye irritation
H401 - Toxic to aquatic life

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Avoid breathing dust / fume / gas / mist / vapours / spray
Wash hands thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves / protective clothing / eye protection / face protection
Avoid release to the environment
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.
Precautionary Statements - Storage
Store in well-ventilated place
Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification
Causes mild skin irritation

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No.	Weight-%
Benzaldehyde	100-52-7	100

4. FIRST AID MEASURES

Description of first aid measures

Emergency telephone number Poisons Information Center, New Zealand: 0800 764 766
Poisons Information Center, Australia: 13 11 26

Inhalation Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical attention immediately if symptoms occur.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation. May cause redness and tearing of the eyes.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Water spray. Dry chemical or CO2. Foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Combustible liquid. On burning will emit toxic fumes, including those of oxides of carbon. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazardous combustion products Oxides of carbon. Peroxides. Benzoic acid.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code 3Z

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes, and clothing. Avoid breathing dust / fume / gas / mist / vapours / spray. Ensure adequate ventilation. Evacuate personnel to safe areas. Do not touch or walk through spilled material. Keep people away from and upwind of spill/leak. Use

personal protective equipment as required.

For emergency responders Shut off ignition sources. Clear area of all unprotected personnel. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Refer to protective measures listed in Sections 7 and 8. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Remove ignition sources. Provide adequate ventilation. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Slippery when spilt. Avoid accidents, clean up immediately. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors. Use personal protection equipment. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. Use according to package label instructions.

General hygiene considerations Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Wear suitable gloves and eye/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a cool, well-ventilated place. Protect from sunlight. Keep container closed when not in use. Store between 15°C and 25°C. Keep away from open flames, hot surfaces and sources of ignition. Store away from incompatible materials described in Section 10. Do not contaminate food or feed stuffs.

Incompatible materials Strong acids. Bases. Oxidizing agents. Reducing agents. Aluminium. Brass. Bronze. Iron. Copper. and. Oxygen.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by the New Zealand Workplace Health & Safety

Authority.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

Eye/face protection Goggles.

Hand protection Impervious gloves.

Skin and body protection Wear suitable protective clothing. Boots. Overalls.

Respiratory protection If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available.
Color	Colourless to Light yellow
Odor	Bitter Almond
Odor threshold	0.045 ppm

Property	**Values**	**Remarks • Method**
pH	No data available	None known
Melting point / freezing point	-56.1 °C	
Boiling point / boiling range	179 °C	
Flash point	63.9 °C	None known
Evaporation rate	0.04	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	12.3 (Explosion is possible above the upper explosion limit due to partial oxidation of benzaldehyde to benzoic acid)	

Lower flammability or explosive limits	1.4	
Vapor pressure	0.9 mmHg @20°C	
Vapor density	3.66	
Relative density	1.043	
Water solubility	6.55 g/L @ 25 °C	
Solubility(ies)	Immiscible in water	None known
Partition coefficient	1.48	None known
Autoignition temperature	190 °C	
Decomposition temperature	No data available	None known
Kinematic viscosity	1.4 mPa.s @25°C	None known
Dynamic viscosity	No data available	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Oxidise readily by air to benzoic acid.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions May form peroxides in the presence of air.
Finely dispersed material may ignite spontaneously.
Reacts violently with peroxyformic acid.

Conditions to avoid

Conditions to avoid Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to hot surfaces. Avoid exposure to air. Direct sunlight. Contact with foodstuffs.

Incompatible materials

Incompatible materials Strong acids. Bases. Oxidizing agents. Reducing agents. Aluminium. Brass. Bronze. Iron. Copper. and. Oxygen.

Hazardous decomposition products

Hazardous decomposition products Oxides of carbon. Peroxides. Benzoic acid.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Harmful if inhaled. Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea.

Eye contact Causes serious eye irritation.

Skin contact Causes mild skin irritation.

Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms Irritation. May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Benzaldehyde	1430 mg/kg	2500 mg/kg	1 - 5 mg/L/4hr (1)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Moderate irritant (rabbit). (1).

Serious eye damage/eye irritation Causes serious eye irritation.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Avoid contaminating waterways. Toxic to aquatic life.

Terrestrial ecotoxicity There is no data for this product.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Benzaldehyde	-	LC50: 10.6 - 11.8mg/L (96h, Oncorhynchus mykiss) LC50: =12.69mg/L (96h, Oncorhynchus mykiss) LC50: 0.8 - 1.44mg/L (96h, Lepomis macrochirus) LC50: 6.8 -	EC50: =50mg/L (24h, Daphnia magna)

		8.53mg/L (96h, Pimephales promelas) LC50: =7.5mg/L (96h, Lepomis macrochirus)	

Persistence and degradability

Persistence and degradability This product is readily biodegradable.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Component Information

Chemical name	Partition coefficient
Benzaldehyde	1.48

Other adverse effects

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of product in packaging/container in a way that is consistent with the Hazardous Substances (Disposal) Notice 2017 and the Act, and Hazardous Substances (Amendments and Revocations) Notice 2020. Treat the chemical using a method that changes the characteristics or composition of the chemical so that the chemical is no longer a hazardous chemical; or export the chemical from New Zealand as waste. Class 9 chemical , if the chemical, or if it contains a component that is bioaccumulative and not rapidly degradable, then any component that is bioaccumulative and not rapidly degradable must be removed. The product may only be discharged into the environment if an environmental exposure limit has been set for the chemical (or a component of the chemical); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the environmental exposure limit. Class 9 chemicals – if the chemical, or if it contains a component that is bioaccumulative and not rapidly degradable, then any component that is bioaccumulative and not rapidly degradable must be removed. The product may only be discharged into the environment if an environmental exposure limit has been set for the chemical (or a component of the chemical); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the environmental exposure limit.

Contaminated packaging For packages that have been in direct contact with hazardous chemicals, the person must ensure that the package is rendered incapable of containing any chemical. It must be disposed of in a manner that is consistent with the requirements for disposal of the chemical that it contained, taking into account the material the package is manufactured from. Packages may only be reused or recycled if the package has been treated to remove any residual contents of the hazardous chemical (class 1, 2, 3, 4, or 5); or the contents of the residue in the package are below the threshold for the chemical to be classified as hazardous (class 6, 8, or 9 chemical).

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on

Land; DANGEROUS GOODS.

UN number	1990
Proper shipping name	BENZALDEHYDE
Hazard class	9
Packing group	III
Hazchem code	3Z

IATA Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number	1990
UN proper shipping name	BENZALDEHYDE
Transport hazard class(es)	9
Packing group	III

IMDG Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	1990
UN proper shipping name	BENZALDEHYDE
Transport hazard class(es)	9
Packing group	III
IMDG EMS Fire	F-A
IMDG EMS Spill	S-A

15. REGULATORY INFORMATION

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

New Zealand

National regulations See section 8 for national exposure control parameters

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International Inventories

NZIoC	This material is listed on the New Zealand Inventory of Chemicals.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AIIC	This material is listed on the Australian Inventory of Industrial Chemicals.

Legend:
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

(1) Bronson & Jacobs Safety Data Sheet 08/ 2018

Issuing Date: 23-Nov-2022

Reason(s) For Issue: 5 Yearly Revised Primary SDS
Change in Hazardous Chemical Classification

Revision Note:
The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer
This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Bronson & Jacobs representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

Bronson and Jacobs incorporating the businesses of Woods and Woods and Keith Harris and Australian Botanical Products.

End of Safety Data Sheet