

Infosafe No™ 1CHM5 Issue Date : August 2022 RE-ISSUED by CHEMSUPP

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

Section 1 - Identification

Product Identifier DIMETHYLFORMAMIDE

Company Name CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)

Address 38 - 50 Bedford Street GILLMAN
SA 5013 Australia

Telephone/Fax Number Tel: (08) 8440-2000

Emergency Phone Number CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

E-mail Address www.chemsupply.com.au

Recommended use of the chemical and restrictions on use Solvent for vinyl resins and acetylene, butadiene, acid gases; polyacrylic fibres; catalyst in carboxylation reactions; organic synthesis; carrier for gases; electrical/electronic engineering industry; leather processing industry; polymers industry; textile processing industry; pharmaceuticals; solvents and laboratory reagent.

| Other Names | <u>Name</u> | <u>Product Code</u> |
|--------------------|-----------------------|----------------------------|
| | DIMETHYLFORMAMIDE AR | DA009 |
| | DIMETHYLFORMAMIDE TG | DT009 |
| | N,N-Dimethylformamide | |
| | DMF | |
| | DMFA | |
| | Formyldimethylamine | |

Other Information

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Section 2 - Hazard(s) Identification

GHS Classification of the Substance/Mixture Acute Toxicity - Dermal: Category 4
Eye Damage/Irritation: Category 2A
Flammable Liquids: Category 3
Acute Toxicity - Inhalation: Category 4
Toxic to Reproduction: Category 1B

Signal Word DANGER

Hazard Statement (s) H226 Flammable liquid and vapour.
H312 Harmful in contact with skin.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H360 May damage fertility or the unborn child.

Pictogram (s) Flame, Health hazard, Exclamation mark,



| | | |
|--------------------|--------------------------|-----------------------|
| Infosafe No™ 1CHM5 | Issue Date : August 2022 | RE-ISSUED by CHEMSUPP |
|--------------------|--------------------------|-----------------------|

 Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

| | |
|---|--|
| Precautionary Statement – Prevention | P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P243 Take precautionary measures against static discharge. P233 Keep container tightly closed. P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical/ventilating/lighting/.../equipment. P242 Use only non-sparking tools. P261 Avoid breathing fumes or vapours. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P281 Use personal protective equipment as required. |
| Precautionary Statement – Response | P302+P352 IF ON SKIN: Wash with plenty of soap and water. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 Wash contaminated clothing before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P363 Wash contaminated clothing before reuse. P308+P313 IF exposed or concerned: Get medical advice/attention. P370+P378 In case of fire: Use foam, dry chemical, CO2 or water spray for extinction. |
| Precautionary Statement – Storage | P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. |
| Precautionary Statement – Disposal | P501 Dispose of contents/container according to local, state and federal regulations. |

Section 3 - Composition and Information on Ingredients

| Ingredients | <u>Name</u> | <u>CAS</u> | <u>Proportion</u> |
|-------------|-------------------|------------|-------------------|
| | Dimethylformamide | 68-12-2 | 100 % |

Section 4 - First Aid Measures

| | |
|-----------------------------|---|
| Inhalation | Remove from exposure, rest and keep warm. If breathing has stopped, apply artificial respiration. Ensure airways are clear and have qualified person give oxygen through a face mask if breathing is difficult. Seek medical attention. |
| Ingestion | Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice. |
| Skin | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Contaminated clothing must be laundered before re-use. Seek medical attention. Absorption through skin may be a significant source of exposure. |
| Eye | If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention. |
| First Aid Facilities | Maintain eyewash fountain and drench facilities in work area. |
| Advice to Doctor | Treat symptomatically based on judgement of doctor and individual reactions of the patient. |
| Other Information | For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor. |

Section 5 - Firefighting Measures

Infosafe No™ 1CHM5 Issue Date : August 2022 RE-ISSUED by CHEMSUPP

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

| | |
|---|--|
| Hazards from Combustion Products | Irritating and highly toxic fumes and gases, including dimethylamine, carbon monoxide, ammonia, carbon dioxide, amines and nitrogen oxides (NO, NO ₂ , NO _x). |
| Specific Methods | Small fire: Use foam, dry chemical, CO ₂ or water spray. Large fire: Use foam, fog or water spray. Do not use water jets. If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers. |
| Specific Hazards Arising from the Chemical | May be ignited by heat, sparks or flame. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Vapour is heavier than air and will collect in low or confined areas (drains, basements, tanks). The liquid is lighter than water. Containers may explode when heated. Vapours from runoff may create an explosion hazard. Fire will produce irritating, poisonous and/or corrosive gases. |
| Hazchem Code | 2W |
| Decomposition Temperature | >350 °C |
| Precautions in connection with Fire | Wear SCBA and fully-encapsulating, gas-tight suit when handling these substances. Structural firefighter's uniform is NOT effective for these materials. |

Section 6 - Accidental Release Measures

| | |
|---|---|
| Spills & Disposal | Evacuate unprotected personnel from danger area. ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 25m - All equipment used when handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours - Water spray may be used to knock down or divert vapour clouds. Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL. |
| Personal Precautions | Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Use in ventilated areas or in fumehood. Use personal protective equipment listed in Section 8. |
| Personal Protection | Wear protective clothing specified for normal operations (see Section 8) |
| Clean-up Methods - Small Spillages | Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum. |

Section 7 - Handling and Storage

| | |
|--------------------------------------|---|
| Precautions for Safe Handling | Avoid ingestion and inhalation of gas/fumes/vapour/spray mist. Avoid contact with eyes, skin and clothing. Use approved flammable liquid storage containers in the work area. Prevent release of vapours and mists into workplace air. Keep locked up. Keep containers tightly closed when not in use. Open and handle container with care. Ensure good ventilation at the workplace. Use only in designated areas with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Protect against physical damage. Separate from incompatibles, such as oxidizing agents, acids. Do not empty into drains. Keep material away from heat, sparks, flames and all sources of ignition. Areas of use should be No Smoking areas. Take precautionary measures against static discharges. Ground and bond containers and equipment when transferring material. Use flame-, spark- and explosion-proof tools and electrical (ventilating, lighting and material handling) equipment. Empty containers retain product residue, (liquid and/or vapour), and can be dangerous and hazardous; observe all warnings and precautions listed for the |
|--------------------------------------|---|

| | | |
|--------------------|--------------------------|-----------------------|
| Infosafe No™ 1CHM5 | Issue Date : August 2022 | RE-ISSUED by CHEMSUPP |
|--------------------|--------------------------|-----------------------|

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

| | |
|---|--|
| Conditions for safe storage, including any incompatibilities | product. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Store in a segregated and approved flammables area. Store in tightly closed containers, in a cool, dry, well-ventilated area away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Keep container tightly closed and sealed until ready for use. Keep well closed and protected from direct sunlight and moisture. Separate from incompatibles, including foodstuffs, strong oxidising agents, halogens and reducing agents. Protect against physical damage. Check regularly for leaks. Keep away from heat and all sources of ignition. |
| Corrosiveness | Will attack some forms of plastics, rubber, and coatings. |
| Storage Regulations | Refer Australian Standard AS 1940-2004 'The storage and handling of flammable and combustible liquids'. |
| Storage Temperatures | Store at room temperature (15 to 25 °C recommended). |
| Unsuitable Materials | Iron, copper, tin and their alloys, organic materials, and some forms of plastics, rubber, and coatings. |

Section 8 - Exposure Controls and Personal Protection

| Occupational Exposure Limit (OEL) Values | <u>Name</u> | STEL | | TWA | | Footnote |
|---|---|---------------------|-------------------|---------------------|-------------------|-----------------|
| | | <u>mg/m3</u> | <u>ppm</u> | <u>mg/m3</u> | <u>ppm</u> | |
| | Dimethylformamide | 30 | 10 | | | |
| Other Exposure Information | A time weighted average (TWA) has been established for Dimethylformamide (Safe Work Australia) of 30 mg/m ³ , (10 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. Note: Absorption through skin may be a significant source of exposure. | | | | | |
| Engineering Controls | Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average). Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required. Refer to AS 1940-The storage and handling of flammable and combustible liquids and AS 2430-Explosive gas atmospheres for further information concerning ventilation requirements. | | | | | |
| Respiratory Protection | Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels. | | | | | |
| Eye and Face Protection | The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. | | | | | |
| Hand Protection | Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Unsupported Butyl. Unsupported Neoprene/Latex. Unsupported Neoprene. Unsupported Natural Rubber Latex. Supported Natural Rubber Latex. Good: Supported Neoprene. Poor: Nitrile rubber gloves Vinyl gloves. | | | | | |
| Personal Protective Equipment | Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken. | | | | | |
| Footwear | Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use. | | | | | |
| Body Protection | Flame retardant antistatic protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. | | | | | |
| Hygiene Measures | Always wash hands before smoking, eating or using the toilet. Wash | | | | | |

| | | |
|--------------------|--------------------------|-----------------------|
| Infosafe No™ 1CHM5 | Issue Date : August 2022 | RE-ISSUED by CHEMSUPP |
|--------------------|--------------------------|-----------------------|

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

contaminated clothing and other protective equipment before storing or re-using.

Section 9 - Physical and Chemical Properties

| | |
|---|--|
| Form | Liquid |
| Appearance | Clear, colourless to light yellow, mobile, hygroscopic liquid. |
| Odour | Pungent fishy odour; faint amine-like odour. |
| Melting Point | -61 °C |
| Boiling Point | 153 °C |
| Decomposition Temperature | >350 °C |
| Solubility in Water | Miscible (soluble) in all proportions. |
| Solubility in Organic Solvents | Miscible with most common organic solvents. Soluble in acetone, ketones, ethanol, alcohol, ether, benzene, chloroform, and aromatic hydrocarbons, but not with aliphatic hydrocarbons and halogenated hydrocarbons. |
| Specific Gravity | 0.9445 (g/ml at 25 °C) |
| pH | 6.7 (0.5 molar, H ₂ O). |
| Vapour Pressure | 2.65 mmHg, 0.35 kPa at 20 °C; 3.7 mmHg, 0.48 kPa at 25 °C; 26 mmHg, 3.46 kPa at 60 °C. |
| Relative Vapour Density (Air=1) | 2.51 |
| Evaporation Rate | 0.17 (butylacetate = 1). |
| Coefficient Water/Oil Distr. | log(oil/water) = -1. |
| Odour Threshold | 0.12-60 mg/m ³ . |
| Viscosity | 0.85 mPa.s @ 20 °C |
| Volatile Component | >99%vol |
| Partition Coefficient: n-octanol/water (log value) | Log P (o/w): -0.85. log Kow: -1.01. |
| Surface Tension | 36.42 dyne/cm @ 25 °C. |
| Flash Point | 58 °C (CC); 67 °C (OC). |
| Flammability | Flammable liquid. FLAMMABLE. Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition. |
| Auto-ignition Temperature | 445 °C; 410 °C. |
| Flammable Limits - Lower | 2.2 vol% |
| Flammable Limits - Upper | 16 vol% |
| Explosion Properties | Above 58°C explosive vapour/air mixtures may be formed. Explosive when exposed to heat, flame or fire. Runoff to sewer may create fire or explosion hazard. Mixture with triethylaluminium explodes when heated. Contact with carbon tetrachloride and other halogenated hydrocarbons, particularly when in contact with iron, as well as contact with strong oxidizing agents (e.g., methylene diisocyanate, halogens, and permanganates) may cause fires and explosions. |
| Molecular Weight | 73.09 |

| | | |
|--------------------|--------------------------|-----------------------|
| Infosafe No™ 1CHM5 | Issue Date : August 2022 | RE-ISSUED by CHEMSUPP |
|--------------------|--------------------------|-----------------------|

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

Saturated Vapour Concentration 12 g/m³ @ 20 °C; 14.8 g/m³ at 25 °C.

Other Information Gases such as acetylene, butadiene, isoprene, sulfur dioxide and hydrochloric acid are soluble in DMF; ammonia, carbon monoxide and dioxide, oxygen and hydrogen are only sparingly soluble.
 Refractive index: 1.430 @ 20 °C; 1.42083 @ 25 °C.
 Conversion factor (at 20 °C): 1 ppm = 3 mg/m³; 1 mg/m³ = 0.33 ppm.
 El. dipole moment: 3.86 Debye @ 25 °C.
 Dielectricity constant: 36.7 @ 20 °C.
 Critical temperature: 374 °C;
 Critical pressure: 4.48 MPa.

Section 10 - Stability and Reactivity

Chemical Stability Usually stable, at temperatures below 100 °C in closed containers and under ordinary conditions of storage and handling. Temperatures above 350 °C may cause decomposition to form dimethylamine and carbon dioxide, with pressure developing in closed containers. Hygroscopic and easily absorbs water to form a humid atmosphere and should therefore be kept under dry nitrogen.

Possibility of Hazardous Reactions Can react violently with oxidizing materials, halogenated hydrocarbons, iron and some inorganic nitrates. Reactive with acids. Reaction with inorganic acid chlorides, such as phosphorous oxychloride and thionyl chloride, may form dimethylcarbamoyl, a suspect carcinogen. May react violently with alkyl aluminiums. Will attack some forms of plastics, rubber, and coatings. May decompose above 350°C, forming dimethylamine & carbon dioxide, with pressure developing in closed containers.

Conditions to Avoid Excess heat, ignition sources (sparks, flames, static discharge and oxidizing materials), moisture, incompatible materials.

Incompatible Materials Oxidizing materials, nitrates, inorganic nitrates, organic nitrates, organic materials, alkali metals, halogens, halides, anhydrides, phenols, isocyanates, metallic oxides, nonmetallic oxides, ammonia, acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), strong bases (sodium hydroxide), metals (alkali and alkaline, e.g. cesium, potassium, sodium), metals and metal compounds (toxic, e.g. beryllium, lead acetate, nickel carbonyl, tetraethyl lead), iron, copper, tin and their alloys, reducing agents (strong, e.g. aluminium carbide, chlorosilane, hydrogen phosphide, sodium hydride, lithium hydride, lithium azide), 2,5-dimethylpyrrole, phosphorus oxychloride, hexachlorobenzene, methylene diisocyanate, sodium tetrahydroborate, chromium trioxide, borohydrides, phosphorus trioxide, diborane, octafluoroisobutyrate, sodium nitrite, perchloryl fluoride, potassium methyl 4,4'-dinitrobutyrate), carbon tetrachloride, chloroformates, rubber, leather, alkyl aluminiums, hydrocarbons, active halogen compounds, or halogenated hydrocarbons (especially in combination with metals).

Hazardous Decomposition Products Irritating and toxic fumes and gases, including carbon monoxide, carbon dioxide (CO, CO₂), nitrous gases, nitrogen oxides (NO, NO₂ etc.), ammonia, amines, formic acid and dimethylamine.

Hazardous Polymerization Will not occur. Methylene diisocyanate can polymerize violently on contact.

Section 11 - Toxicological Information

Acute Toxicity - Oral LD50 (rat): range from 2000 to 7170 mg/kg

Acute Toxicity - Dermal LD50 (rat): range from >1100 to >11520 mg/kg

Acute Toxicity - Inhalation LC50 (rat): range from 9432 to 15000 mg/m³

Ingestion Harmful if swallowed. It can cause gastrointestinal tract irritation with heartburn, abdominal irritation and pain, loss of appetite, nausea, vomiting or diarrhoea, constipation, alcohol intolerance, facial flushing (especially after drinking alcohol), headache, dizziness, increased blood pressure, possible unconsciousness, and even asphyxiation. It may also affect the

Infosafe No™ 1CHM5 Issue Date : August 2022 RE-ISSUED by CHEMSUPP

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

cardiovascular system (hypertension, tachycardia, ECG abnormalities), blood (elevated white blood cell counts), and liver damage (hepatomegaly, jaundice, etc). May act as a carcinogen. Exposure may result in foetal death. Fatal dose estimated at 10 gm.

Inhalation

Harmful by inhalation. Causes irritation to respiratory tract. Symptoms may include coughing, dyspnoea, lung and liver damage, kidney, cardiovascular system, bone marrow and central nervous system disorders (convulsions, muscle weakness and other symptoms similar to that of acute ingestion), abdominal pain, loss of appetite, nausea, weakness, fatigue, dizziness, headache, constipation, vomiting, diarrhoea, increased blood pressure, anxiety, tachycardia, palpitations, possible unconsciousness, and even asphyxiation. Exposure to DMF, even at concentrations below 30 mg/m³, may cause alcohol intolerance. Symptoms may include a sudden flushing of the face and skin, tightness in the chest, and dizziness, sometimes accompanied by nausea and dyspnoea. They last from 2 to 4 h and disappear without treatment. Exposure may result in foetal death (based on animal data). Younger individuals may be more sensitive to adverse effects than older individuals (based on animal data).

Skin

Harmful in contact with skin. Causes slight to moderate skin irritation with itching, burning and pain, redness, swelling, or rash. Can cause skin problems. May be readily absorbed through the skin, resulting in symptoms paralleling inhalation. Exposures to high amounts by skin contact has caused major symptoms of epigastric or abdominal pain, which was irradiating and progressive, accompanied by dizziness, nausea, anorexia, vomiting, fatigue, alcohol intolerance, temporary liver function disturbance, morphological changes in the liver, and skin irritation. Symptoms may be delayed from several hours up to several days. If there is significant potential for skin contact, those exposed should regularly rotate in shifts according to a monitored level of DMF metabolites in urine specimens at the end of the shift (preferably at or below 40 ppm expressed as n-monomethylformamide (MMF) for a single individual or at or below 20 ppm MMF for several workers doing the same job). Dimethylformamide can facilitate the absorption of other chemical substances through the skin. Exposure may result in teratogenic effects. Skin irritation test (rabbit): Not irritating.

Skin

Corrosion/Irritation

Eye

Causes slight to moderate eye irritation, with tearing pain or blurred vision, redness, and pain. May cause severe irritation and conjunctivitis. Some complaints of eye irritation have resulted from vapour exposure in industry. Eye irritation test (rabbit): Slightly irritating to irritating.

Serious Eye

Damage/Irritation

Skin Sensitisation

Guinea pig maximization test (guinea pig): not sensitizing.

Carcinogenicity

Dimethylformamide [68-12-2] is evaluated in the IARC Monographs (Vol. 47; Vol. 71; 1999) as Group 3: Not classifiable as to carcinogenicity to humans.

Reproductive

Toxicity

Safe Work Australia - Toxic to Reproduction: Category 1B

Substances that should be regarded as if they impair fertility in humans

There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in impaired fertility on the basis of:

- clear evidence in animal studies of impaired fertility in the absence of toxic effects, or, evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary non-specific consequence of the other toxic effects;
- other relevant information.

Substances that should be regarded as if they cause developmental toxicity to humans

There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in developmental toxicity, generally on the basis of:

- clear results in appropriate animal studies where effects have been observed in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of the other toxic effects;
- other relevant information.

| | | |
|--------------------|--------------------------|-----------------------|
| Infosafe No™ 1CHM5 | Issue Date : August 2022 | RE-ISSUED by CHEMSUPP |
|--------------------|--------------------------|-----------------------|

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

Chronic Effects The liver appears to be the main target organ following chronic exposures, with symptoms such as impaired functions, possible abnormal enlargement of the liver with biochemical signs of liver damage and alcohol intolerance. Repeated or prolonged exposure to the substance can also produce damage to the kidneys, central nervous system (CNS), lungs, blood, the nervous system and possibly the bone marrow. Repeated skin exposure can produce local skin destruction, increased water-loss and dermatitis. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to concentrations above the current exposure standard has been observed to cause liver, kidney, bone marrow and cardiovascular damage. May cause cancer although IARC evidence for cancer in humans shows inadequate data. May cause adverse reproductive effects (paternal and maternal) and teratogenic effects (based on animal data). Repeated or prolonged occupational exposure has been reported to cause headache, fatigue, gastrointestinal and cardiovascular changes, and possible haematological changes, and may cause eye irritation, loss of appetite, anorexia, dizziness, nausea, possible unconsciousness, and even asphyxiation.

Other Information NICNAS assessment:
<https://www.nicnas.gov.au/search?query=68-12-2&collection=nicnas-meta>

Section 12 - Ecological Information

Ecotoxicity When used properly, no impairments in the function of waste-water-treatment plants are to be expected.

Persistence and Degradability Abiotic degradation: air: Rapid degradation.
Biologic degradation: Biodegradation: >90 % /28 d.
The product is readily biodegradable according to the OECD criteria.
ThOD: 1.863 g/g.

Mobility Distribution: log P(oct): -0.85 (experimental).

Bioaccumulative Potential No bioaccumulation is to be expected (log P(o/w) <1).

Environmental Protection Do not allow to enter waters, waste water, or soil!

Acute Toxicity - Fish L. macrochirus LC50: 6300 mg/l /96 h; Onchorhynchus mykiss LC50: 9800 mg/l /96 h; P. promelas LC50: 10600 mg/l /96 h.

Acute Toxicity - Daphnia Daphnia magna EC50: 15700 mg/l /48 h.

Acute Toxicity - Algae Desmodesmus subspicatus IC50: >500 mg/l /96 h.
Maximum permissible toxic concentration: Algal toxicity: Sc. quadricauda IC5: 10 mg/l.

Acute Toxicity - Bacteria Photobacterium phosphoreum EC50: 20000 mg/l /5 min microtox test.

Section 13 - Disposal Considerations

Disposal Considerations Dispose of according to relevant local, state and federal government regulations.

Section 14 - Transport Information

Transport Information Dangerous Goods of Class 3 Flammable Liquids, are incompatible in a placard load with any of the following: - Class 1, Class 2.1, if both the Class 3 and Class 2.1, dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane and Class 7.

ADG UN Number 2265

ADG Proper Shipping Name N,N-DIMETHYL FORMAMIDE

ADG Transport Hazard Class 3

ADG Packing Group III

Hazchem Code 2W

Infosafe No™ 1CHM5 Issue Date : August 2022 RE-ISSUED by CHEMSUPP

Product Name **DIMETHYLFORMAMIDE**

Classified as hazardous

EPG Number 3A3

IERG Number 19

Section 15 - Regulatory Information

Regulatory Information Listed in the Australian Inventory of Chemical Substances (AICS).

Poisons Schedule S6

Section 16 - Any Other Relevant Information

Literature References 'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia.
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals'.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand.
Safe Work Australia, 'Hazardous Chemical Information System'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

Contact Person/Point Paul McCarthy Ph. (08) 8440 2000 **DISCLAIMER STATEMENT:**
All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula Empirical Formula: C₃H₇NO.
Structural Formula: HCON(CH₃)₂.

...End Of MSDS...

© Copyright Chemical Safety International Pty Ltd

Copyright in the source code of the HTML, PDF, XML, XFO and any other electronic files rendered by an Infosafe system for Infosafe MSDS displayed is the intellectual property of Chemical Safety International Pty Ltd.

Copyright in the layout, presentation and appearance of each Infosafe MSDS displayed is the intellectual property of Chemical Safety International Pty Ltd. The compilation of MSDS's displayed is the intellectual property of Chemical Safety International Pty Ltd.

Copying of any MSDS displayed is permitted for personal use only and otherwise is not permitted. In particular the MSDS's displayed cannot be copied for the purpose of sale or licence or for inclusion as part of a collection of MSDS without the express written consent of Chemical Safety International Pty Ltd.