

SAFETY DATA SHEET

Classified as hazardous in accordance with the criteria of EPA New Zealand

Section 1 - Identification

Product Identifier

Product Name <u>Toluene</u>

CAS No 108-88-3

Synonyms Tol; Methylbenzene

Molecular FormulaC7 H8Molecular Weight92.14

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Product Code 364410000; 364410010; 364410025; 364411000; 364415000

Address Thermo Fisher Scientific New Zealand Ltd

244 Bush Road, Albany, Auckland, New Zealand

Emergency Tel. CHEMTREC®

09 980 6780 or +64 9 980 6780

Telephone / Fax Numbers Tel: 09 980 6700

Fax: 09 980 6788

E-mail address ANZinfo@thermofisher.com

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

Classified as hazardous in accordance with the criteria of EPA New Zealand

HSNO Approval Number HSR001227

GHS Classification

Physical hazards

Flammable liquids Category 2

Health hazards

Aspiration Toxicity Category 1 **Acute Oral Toxicity** Category 4 Acute Inhalation Toxicity - Vapors Category 4 Skin Corrosion/Irritation Category 2 Serious Eye Damage/Eye Irritation Category 2 Reproductive Toxicity Category 2 Specific target organ toxicity - (single exposure) Category 3 Specific target organ toxicity - (repeated exposure) Category 2

Environmental hazards

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Chronic aquatic toxicity

Category 3

Label Elements



Signal Word

Danger

Hazard Statements

- H225 Highly flammable liquid and vapor
- H304 May be fatal if swallowed and enters airways
- H315 Causes skin irritation
- H336 May cause drowsiness or dizziness
- H361 Suspected of damaging fertility or the unborn child
- H373 May cause damage to organs through prolonged or repeated exposure
- H412 Harmful to aquatic life with long lasting effects
- H319 Causes serious eye irritation
- H302 + H332 Harmful if swallowed or if inhaled

Precautionary Statements

Prevention

- P202 Do not handle until all safety precautions have been read and understood
- P201 Obtain special instructions before use
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P233 Keep container tightly closed
- P242 Use non-sparking tools
- P260 Do not breathe dust/fume/gas/mist/vapors/spray
- P240 Ground and bond container and receiving equipment
- P241 Use explosion-proof electrical/ ventilating/ lighting equipment
- P243 Take action to prevent static discharges
- P264 Wash face, hands and any exposed skin thoroughly after handling
- P271 Use only outdoors or in a well-ventilated area
- P280 Wear eye protection/ face protection

Response

- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P308 + P313 IF exposed or concerned: Get medical advice/attention
- P331 Do NOT induce vomiting
- P332 + P313 If skin irritation occurs: Get medical advice/attention
- P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
- P362 + P364 Take off contaminated clothing and wash it before reuse

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

Toxic to terrestrial vertebrates

Section 3 - Composition and Information on Ingredients

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| Component | CAS No | Weight % |
|-----------|----------|----------|
| Toluene | 108-88-3 | <=100 |

Section 4 - First Aid Measures

Description of first aid measures

General Advice If symptoms persist, call a physician.

New Zealand Emergency Tel. CHEMTREC®

09 980 6780 or +64 9 980 6780

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur. Risk of serious damage to the lungs (by aspiration).

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call

a physician or poison control center immediately. If vomiting occurs naturally, have victim

lean forward.

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.

First Aid Facilities Eyewash, safety shower and washroom.

Most important symptoms and

effects

Difficulty in breathing. Causes central nervous system depression: Inhalation of high vapor

concentrations may cause symptoms like headache, dizziness, tiredness, nausea and

vomiting

Notes to Physician Treat symptomatically. Smallest quantities reaching the lungs through swallowing or

subsequent vomiting may result in lung edema or pneumonia. Symptoms may be delayed.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Do not use water jetstream.

Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2).

Special protective equipment and precautions for fire fighters

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

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Personal Precautions, Protective Equipment and Emergency Procedures

Emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions

Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Precautions to prevent secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling

Advice on safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

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 and gloves, including the inside, before re-use. Wash hands before breaks and after work.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame.

Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases. Halogenated compounds.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

AS 1940-2004 - The storage and handling of flammable and combustible liquids

Section 8 - Exposure Controls and Personal Protection

Control parameters

Exposure limits

NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.

ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia

| Component | New Zealand WEL | Australia | ACGIH TLV | The United Kingdom |
|-----------|---------------------------|-----------------------------|-------------|------------------------------------|
| Toluene | TWA: 20 ppm | STEL: 150 ppm | TWA: 20 ppm | STEL: 100 ppm 15 min |
| | TWA: 75 mg/m ³ | STEL: 574 mg/m ³ | | STEL: 384 mg/m ³ 15 min |

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| STEL: 377 | J J | TWA: 50 ppm 8 hr TWA: 191 mg/m³ 8 hr |
|-----------|-----|---|
| Skir | | Skin |

Biological limit values

NZ - Substances assigned Biological Exposure Indices in the New Zealand Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

ACGIH - American Conference of Governmental Industrial Hygienists (ACGIH) TLVs® and BEIs®- Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. 2022 Edition

| Component | New Zealand | Australia | ACGIH - Biological Exposure Indices | United Kingdom |
|-----------|--|-----------|--|----------------|
| Toluene | 0.03 mg/L (urine) end of exposure or end of shift (Toluene) 0.3 mg/g creatinine (urine) end of exposure or end of shift (O-Cresol) | | 0.02 mg/L Medium: blood Time: prior to last shift of workweek Determinant: Toluene 0.03 mg/L Medium: urine Time: end of shift Determinant: Toluene 0.3 mg/g creatinine Medium: urine | |
| | | | Time: end of shift Determinant: o-Cresol with hydrolysis | |

Appropriate engineering controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. 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

Individual protection measures, such as personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard

AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection Protective gloves

| ſ | Glove material | Breakthrough time | Glove thickness | AUS/NZ Standard | Glove comments |
|---|----------------|-------------------|-----------------|-----------------|---|
| - | Viton (R). | < 240 minutes | 0.30 mm | AS/NZS 2161 | Permeation rate 68 µg/cm2/min As tested |
| 1 | | | | | under EN374-3 Determination of |
| 1 | | | | | Resistance to Permeation by Chemicals |
| - | Viton (R) | > 480 minutes | 0.70 mm | | • |

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 compatability, 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.

Skin and body protection Long sleeved clothing

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or

other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use

and maintenance of repiratory protective devices

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ

equivalent)

Recommended half mask:- Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent)

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

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Hygiene MeasuresHandle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water

system.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State Liquid

AppearanceColorlessOdoraromaticOdor Threshold1.74 ppm

pH No information available
Melting Point/Range -95 °C / -139 °F
Softening Point No data available
Politing Point/Pange 1411 °C / 231.8 °F

Boiling Point/Range111 °C / 231.8 °F@ 760 mmHgFlammability (liquid)Highly flammableOn basis of test data

Flammability (solid,gas) Not applicable Liquid

Explosion Limits Lower 1.2 vol%

Upper 7 vol%

Flash Point 4 °C / 39.2 °F Method - No information available

Autoignition Temperature 535 °C / 995 °F Decomposition Temperature Viscosity 535 °C / 995 °F No data available 0.6 mPa.s @ 20 °C

Water Solubility practically insoluble 0.5 g/L @ 20°C

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Componentlog PowToluene2.73

Vapor Pressure 29 mbar @ 20 °C

Density / Specific Gravity 0.866

Bulk DensityNot applicableLiquidVapor Density3.1(Air = 1.0)

Particle characteristics Not applicable (liquid)

Other information

Molecular FormulaC7 H8Molecular Weight92.14

Explosive PropertiesNot explosive Vapors may form explosive mixtures with air

Oxidizing Properties Not oxidising

Evaporation Rate 2.4 (Butyl acetate = 1.0)

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Stable under normal conditions.

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

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Conditions to Avoid Incompatible products, Excess heat, Keep away from open flames, hot surfaces and

sources of ignition.

Incompatible Materials Strong oxidizing agents, Strong acids, Strong bases, Halogenated compounds.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO2).

Section 11 - Toxicological Information

Acute Effects

Information on likely routes of exposure

Product Information

Inhalation Irritating to respiratory system. May be harmful if inhaled. May cause drowsiness and

dizziness.

Eyes Irritating to eyes.

Skin Irritating to skin. Can be absorbed through skin. May be harmful in contact with skin.

Ingestion Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if

Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Harmful if swallowed. Potential for aspiration if swallowed.

Numerical measures of toxicity

(a) acute toxicity;

OralBased on available data, the classification criteria are not metDermalBased on available data, the classification criteria are not metInhalationBased on available data, the classification criteria are not met

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------|----------------------|---------------------|
| Toluene | > 5000 mg/kg (Rat) | 12000 mg/kg (Rabbit) | 26700 ppm (Rat) 1 h |

(b) skin corrosion/irritation; Category 2
Test method OECD 404
Test species rabbit

Observational endpoint Irritating to skin

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;

RespiratoryBased on available data, the classification criteria are not met
Skin
Based on available data, the classification criteria are not met

(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; Category 2

Developmental Effects Developmental effects have occurred in experimental animals

Teratogenicity Possible risk of harm to the unborn child

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(h) STOT-single exposure; Category 3

Results / Target organs Central nervous system (CNS)

(i) STOT-repeated exposure; Category 2

Target Organs Liver, Kidney, Central nervous system (CNS), Blood, spleen, Neuropsychological effects,

Eyes, Ears.

(j) aspiration hazard; Category 1

Symptoms / effects, both acute and delayed

Causes central nervous system depression. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Section 12 - Ecological Information

Ecotoxicity

Aquatic ecotoxicity The product contains following substances which are hazardous for the environment.

Contains a substance which is:. Toxic to aquatic organisms.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|-----------|----------------------|-------------------------|------------------------|-----------------------|
| Toluene | 50-70 mg/L LC50 96 h | EC50: = 11.5 mg/L, 48h | EC50: = 12.5 mg/L, 72h | EC50 = 19.7 mg/L 30 |
| | 5-7 mg/L LC50 96 h | (Daphnia magna) | static | min |
| | 15-19 mg/L LC50 96 h | EC50: 5.46 - 9.83 mg/L, | (Pseudokirchneriella | |
| | 28 mg/L LC50 96 h | 48h Static (Daphnia | subcapitata) | |
| | 12 mg/L LC50 96 h | magna) | EC50: > 433 mg/L, 96h | |
| | | | (Pseudokirchneriella | |
| | | | subcapitata) | |
| | | | | |

Terrestrial ecotoxicity There is no data for this product

Persistence and Degradability Readily biodegradable

Persistence Persistence is unlikely.

| | Component | Degradability |
|---|--------------------|---------------|
| Г | Toluene | 86% (20d) |
| 1 | 108-88-3 (<=100) | l ' ' |

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|-----------|---------|-------------------------------|
| Toluene | 2.73 | 90 |

Mobility The product contains volatile organic compounds (VOC) which will evaporate easily from all

surfaces. Spillage unlikely to penetrate soil. The product is insoluble and floats on water. Is

not likely mobile in the environment due its low water solubility.

Other adverse effects

Endocrine Disruptor Information
Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors
This product does not contain any known or suspected substance
This product does not contain any known or suspected substance

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Section 13 - Disposal Considerations

Waste treatment methods

Waste from Residues/Unused

Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information

Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains.

Section 14 - Transport Information

| Component | Hazchem Code |
|--------------------|--------------|
| Toluene | 3YE |
| 108-88-3 (<=100) | |

NZS 5433:2020

UN-No UN1294 **Proper Shipping Name** TOLUENE

Hazard Class 3 Packing Group II

<u>IATA</u>

UN-No UN1294 Proper Shipping Name TOLUENE

Hazard Class 3
Packing Group ||

IMDG/IMO

UN-No UN1294 Proper Shipping Name TOLUENE

Hazard Class 3 Packing Group

Environmental hazards No hazards identified

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable, packaged goods

Special Precautions

No special precautions required. Please refer to the applicable dangerous goods

regulations for additional information.

Additional information None known

Section 15 - Regulatory Information

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

| HSNO Approval Number | HSR001227 |
|----------------------|-----------|

National Regulations

Any applicable tolerable exposure limits and environmental exposure limits according to the EPA Controls for Hazardous Substances are listed below

| Component | Tolerable Exposure Limit (TEL) Air | Tolerable Exposure Limit (TEL) Water | Tolerable Exposure Limit (TEL) Surface | Environmental Exposure Limits (EEL) |
|-----------|---------------------------------------|--------------------------------------|--|--|
| Toluene | 400 μg/m³ | 0.8 mg/L | | 330 µg/L (Water) |

Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information. Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information.

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

International Regulations

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

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

Rotterdam Convention (PIC) Not applicable

Authorisation/Restrictions according to EU REACH

| Component | , | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | • • • |
|-----------|---|---|-------|
| Toluene | - | Use restricted. See item 48. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) | - |

https://echa.europa.eu/substances-restricted-under-reach

International Inventories

New Zealand (NZIoC), Australia (AICS), Europe (EINECS/ELINCS/NLP), Korea (KECL), China (IECSC), Taiwan (TCSI), Japan (ISHL), Canada (DSL/NDSL), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| L | Component | CAS No | NZIOC | AICS | EINECS | ELINCS | NLP | KECL | IECSC | TCSI |
|---|-----------|----------|-------|--|-----------|--------|------|----------|-------|------|
| | Toluene | 108-88-3 | X | Х | 203-625-9 | - | ı | KE-33936 | Χ | Х |
| | | | | | | | | | | |
| | Component | CAS No | TSCA | TSCA TSCA Inventory notification - Active-Inactive | | DSL | NDSL | PICCS | ISHL | ENCS |
| t | Toluene | 108-88-3 | X | | TIVF | Υ | _ | X | Y | Y |

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Section 16 - Other Information

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This safety data sheet complies with the requirements of the EPA Hazardous Substances (Hazard Classification) Notice 2020 and WorkSafe New Zealand Regulations

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

IECSC - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer NZS 5433:2020 - Transport of Dangerous Goods on Land

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

 $\ensuremath{\mathsf{MARPOL}}$ - International Convention for the Prevention of Pollution from Ships

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50% WEL - Workplace Exposure Limit DNEL - Derived No Effect Level

POW - Partition coefficient Octanol:Water **vPvB** - very Persistent, very Bioaccumulative

VOC - (Volatile Organic Compound)

AICS - Australian Inventory of Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

ACGIH - American Conference of Governmental Industrial Hygienists

PNEC - Predicted No Effect Concentration

OECD - Organisation for Economic Co-operation and Development **IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

ADG - Australian Code for the Transport of Dangerous Goods by Road and Rail

LC50 - Lethal Concentration 50% **ATE** - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment NOEC - No Observed Effect Concentration

BCF - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data

HSNO classifications provided in the New Zealand Chemical Classification Information Database (CCID).

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

EPA Guide to classifying hazardous substances in New Zealand

EPA - Assigning a product to an existing HSNO approval guide

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.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts. Chemical incident response training.

Revision Date 10-Mar-2023 Revision Summary Not applicable

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

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