SAFETY DATA SHEET

According to
HSNO Hazardous Substances (Safety Data Sheets) Notice 2017

Section 1: Identification of the Substance/Mixture and of the Supplier

Product:	**Toluene**
Product Use:	Used as a solvent for paint, resins, lacquers inks & adhesives
Restriction of Use:	Refer to Section 15
Cmpany Details:	**Marketing Chemicals Ltd**
Address:	2 Rymer Place, Mangere Bridge Auckland. New Zealand
Telephone:	+64 9 634 3862 [8.00 am to 4.30pm – Monday to Friday]
Fax:	+64 9 634 3864
Emergency No:	**+64 274 736008(24 hours)** **0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	6 September 2019

Section 2: Hazard Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval No: HSR001227

Pictograms:

Flammable Toxic/Irritant Chronic

Signal Word: **DANGER**

HSNO Classes	Hazard Code	Hazard Statement	GHS Category
3.1B	H225	Highly flammable liquid and vapour.	Flam. Liq. 2
6.1D (oral)	H302	Harmful if swallowed.	Acute Tox. 4
6.1D (inh)	H332	Harmful if inhaled.	Acute Tox. 4
6.3A	H315	Causes skin irritation.	Skin Irrit. 2
6.4A	H319	Causes serious eye irritation.	Eye Irrit. 2A
6.8B	H361	Suspected of damaging fertility or the unborn child.	Repr. 2
6.9B	H373	May cause damage to organs through prolonged or repeated exposure	STOT RE 2
9.1D	H401	Toxic to aquatic life.	Aquatic Chronic 4
9.3C	H433	Harmful to terrestrial vertebrates.	-

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.

P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, and lighting.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective clothing.
P281	Use personal protective equipment as required.

Response code	**Response Statement**
P101	If medical advice is needed, have product container or label at hand.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P362	Take off contaminated clothing and wash before re-use.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P303 + P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position 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.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use dry chemical powder, carbon dioxide, or water spray for extinction.

Storage Code	**Storage Statement**
P405	Store locked up.
P403 + P235	Store in a well-ventilated place. Keep cool.

Disposal Code	**Disposal Statement**
P501	Refer to Section 13.

Section 3: Composition/Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Toluene	100	108-88-3

Section 4: First Aid Measures

Routes of Exposure:

If in Eyes	Hold eyes open and rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do after the first 5 minutes. Continue rinsing for at least 15 minutes. Get medical attention if irritation persists.
If on Skin	Remove immediately all contaminated clothing and footwear. Wash affected area with plenty of water followed by soap and water. Get medical advice if irritation persists. Wash contaminated clothing/footwear before re-use.
If Swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Seek medical attention if needed.

If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Apply artificial respiration if not breathing. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed
Symptoms:

Ingestion	Harmful if swallowed, will irritate throat and tube to stomach, and may cause nausea. Vomiting may cause this product to be aspirated to the lungs resulting in chemical pneumonitis.
Inhalation	Harmful by inhalation. The inhalation of vapours will cause dizziness and drowsiness. Possibility also of organ damage through prolonged use or exposure. Central nervous system depression includes nausea, headaches, dizziness and possible loss of consciousness, coma and even death.
Skin	This product is irritating to the skin with prolonged exposure. It may result in dryness and cracking of skin.
Eyes	This product is irritating to eyes and will cause redness and swelling with a burning sensation and blurred vision.
Chronic	Suspected of damaging fertility or the unborn child. May cause damage to organs through repeated or prolonged exposure.
Notes to Physician	Any material aspirated during vomiting may produce lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. Following acute or short term repeated exposures to toluene: Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10. Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr, which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.

Section 5: Fire Fighting Measures

Hazard Type	Flammable Liquid
Flash Point	4^0C
Auto Ignition Point	529 - 536^{0}C
Flammable Limits in Air % by Volume	1.3 to 7.0%
Hazards from combustion products	Vapour accumulations may flash and/or explode if ignited. Keep ignition sources, open flames, ect. away from those fumes.
Suitable Extinguishing media	Dry chemical, foam, or carbon dioxide.
Precautions for firefighters and special protective clothing	Proper respiratory equipment to protect against the hazardous effects of combustion products is recommended. Water in a straight hose stream may cause fire to spread and should be used as a cooling medium only.
HAZCHEM CODE	**3YE**

Section 6: Accidental Release Measures

SMALL SPILL: Extinguish possible sources of ignition. Evacuate all unprotected personnel and ventilate area. Only personnel equipped with proper respiratory, skin/eye protection should enter spill area. Dike area to contain spill and clean up by absorbing on an inert absorbent or other means. Don't flush into sewers or natural waterways.
LARGE SPILL: Contain material as described above and call the local fire or police department for immediate emergency assistance.
Dispose according to Local Regulations

Section 7: Handling and Storage

Handling:
This product is highly flammable. Read label before use.

Do not handle until all safety precautions have been read and understood. Do not open near open flame, sources of heat or ignition. No smoking. Keep container closed. Handle containers with care. Open slowly to control possible pressure release.
Electrically bond and ground all containers, personnel, and equipment before transfer or use of product. Material may accumulate static discharge. Use only non-sparking tools and equipment, including explosion-proof equipment. Do not use compressed air for filling, discharging or handling operations.

Wear personal protection equipment. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion, inhalation, eye and skin contact. Do not eat, drink, or smoke in work areas. Wash thoroughly after handling. Remove contaminated clothing and wash before re-use.

Storage:
Keep out of reach of children. Store locked up in closed containers a cool, dry well-ventilated place away from direct sunlight. Minimize or eliminate any sources of ignition such as static build-up, heat, spark, and flame. Do not pressurize, cut, heat, or weld containers - residual vapours are extremely flammable. This product is highly flammable and will fuel a fire in progress.

Strong Incompatibility:

- reacts violently with strong oxidisers, bromine, bromine trifluoride, chlorine, hydrochloric acid/ sulfuric acid mixture, 1,3-dichloro-5,5-dimethyl-2,4-imidazolidindione, dinitrogen tetraoxide, fluorine, concentrated nitric acid, nitrogen dioxide, silver chloride, sulfur dichloride, uranium fluoride, vinyl acetate
- forms explosive mixtures with strong acids, strong oxidisers, silver perchlorate, tetranitromethane
- is incompatible with bis-toluenediazo oxide
- attacks some plastics, rubber and coatings.

Section 8: Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		STEL	
Substance	**ppm**	**mg/m^3**	**ppm**	**mg/m^3**
Toluene (skin) [108-88-3]	50	188	-	-

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2017 9TH EDITION.

Personal Protection Equipment

Engineering Controls: General (mechanical) room ventilation is considered satisfactory in enclosed spaces. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

Eye / Face Protection: Wear safety glasses with side shields or goggles when handling this material.

Body Protection: PVC-coated gloves. Avoid skin contact. If skin contact or contamination of clothing is likely, protective clothing should be worn.

Respiratory Protection: Use NIOSH/MSHA approved respirators.

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715,

EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Section 9: Physical and Chemical Properties

Appearance	Liquid
Colour	Clear Colourless
Odour	Solvent
Odour Threshold	Not available
pH	Not applicable
Boiling Point	110.6^{0}C
Melting Point	Not available
Freezing Point	Not available
Flash Point	4^{0}C
Flammability	Flammable
Upper and Lower Explosive Limits	1.3% to 7%
Vapour Pressure	2.93 (kPa @ 20^{0}C)
Vapour Density	3.0
Specific Gravity	0.87@ 20^{0}C
Solubility in Water (mg/l)	526
Partition Coefficient:	Not available
Auto-ignition Temperature	529-536^{0}C
Decomposition Temperature	Not available
Kinematic Viscosity	Not available
Particle Characteristics	Not applicable
% Volatiles	100

Section 10: Stability and Reactivity

Stability of the Substance:	Stable
Conditions to avoid:	Exposure to excessive heat, open flames and sparks. Avoid conditions that favour the formation of excessive mists and/or fumes.
Materials to avoid:	Strong oxidizing agents.
Hazardous Decomposition Products:	Oxides of Carbon when burned.

Section 11: Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed, will irritate throat and tube to stomach, and may cause nausea. Vomiting may cause this product to be aspirated to the lungs resulting in chemical pneumonitis. SPECIES: Rat; ENDPOINT: LD50 ;VALUE: 3280 mg/kg
Dermal	Not applicable.
Inhalation	Harmful by inhalation. The inhalation of vapours will cause dizziness and drowsiness. Possibility also of organ damage through prolonged use or exposure. Central nervous system depression includes nausea, headaches, dizziness and possible loss of consciousness, coma and even death. SPECIES: Rat; ENDPOINT: LC50;VALUE: 12.5 - 28.8 mg/l
Eye	This product is irritating to eyes and will cause redness and swelling with a burning sensation and blurred vision
Skin	This product is irritating to the skin with prolonged exposure. It may result in dryness and cracking of skin.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.

Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Repeated over exposure may cause hemolysis of the red blood cells leading to possible liver and kidney damage. There is evidence of potentially irreversible damage to the peripheral nervous system, particularly arms and legs. Any existing dermatitis may be exacerbated by exposure to this product. Prolonged contact with this product will result in irritant contact dermatitis if care is not taken to wash affected areas.

Section 12: Ecotoxicological Information

HSNO Classes: 9.1D = Toxic to aquatic life.
9.3C = Harmful to terrestrial vertebrates.

(fish)
SPECIES: Oncorhynchus mykiss ;Rainbow trout,donaldson trout ;
DURATION: 96 hr
ENDPOINT: LC50 (Mortality) ;VALUE: 5.8 mg/l

(crustacean)
ACUTE
SPECIES: Daphnia magna (Crustacea) ;
DURATION: 48 hr
ENDPOINT: EC50 ;VALUE: 11.5 mg/l

Product:	
Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available

Do not allow to enter waterways.

Section 13: Disposal Considerations

Disposal Method:
Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain fumes and vapours that are flammable and harmful. Ensure that empty packaging is allowed to dry.
Precautions or methods to avoid: This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams, or rivers. This product is ash less and can be burned directly in appropriate equipment.

Section 14: Transport Information

This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2012

Road, Rail, Sea and Air Transport

UN No	1294
Class - Primary	3
Packing Group	II
Proper Shipping Name	TOLUENE
Marine Pollutant	No
Special Provisions	If the product's individual container is below 1L, it can be transported as a

	non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.
Hazchem Code	3YE

Section 15: Regulatory Information

This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval Code: HSR001227

HSNO Classification: 3.1B, 6.1D(oral, inhalation), 6.3A, 6.4A, 6.8B, 6.9B(inhalation), 9.1D, 9.3C

HSW (HS) Regulations 2017 and EPA Notices	**Trigger Quantity**
Certified Handler	Not required
Location Certificate	100L(>5L), 250L(<5L)< 50L open
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	250L (3.1B)
Emergency Response Plan	1000L (3.1B)
Secondary Containment	1000L(3.1B)
Restriction of Use 77A- A use restriction is applied to this substance.	No person may use this substance described as a pesticide or a veterinary medicine. However, this substance may be used in the formulation of a pesticide or a veterinary medicine. For the purpose of this control— (a) pesticide includes, but is not limited to, a product intended for use as an acaricide, antifouling paint, avicide, fumigant, fungicide, insecticide, herbicide, miticide, molluscicide, piscicide, timber treatment preservative or vertebrate toxic agent (b) veterinary medicine has the same meaning given to it in the Agricultural Compounds and Veterinary Medicines Act 1997.

Section 16: Other Information

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017

2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

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Issue Date: 6 September 2019 Review Date: 6 September 2024