

SAFETY DATA SHEET

TOLUENE

GHS Product Identifier

TOLUENE

Product Code

T1402

Company Name

AIM Group Pty Ltd

Address

171 Thorneside Rd, Thorneside
Qld. 4158

Telephone/Fax Number

Tel: +61 (07)3270 1033

Fax: +61 (07)3270 1044

Emergency phone number

1800 651 818 (Australia) / Poisons Information Centre:13 11 26 (Australia)

Recommended use of the chemical and restrictions on use

Raw material for use in the chemical industry. Solvent.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (G H5) including Work, Health and Safety Regulations, Australia.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Flammable Liquids: Category 2

Aspiration Hazard: Category 1

Skin Corrosion/irritation: Category 2

STOT Repeated Exposure: Category 2

STOT Single Exposure: Category 3 (narcotic)

Toxic to Reproduction: Category 1A

Signal Word (s)

DANGER

Hazard Statement (s)

H225 Highly flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H360 May damage fertility or the unborn child.

11373 May cause damage to organs through prolonged or repeated exposure.

Pictogram (s)

Flame,Exclamation mark,Health hazard



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.
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.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement — Response

P30S+P313 [F exposed or concerned: Get medical advice/attention.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P370+P378 In case of fire: Use carbon dioxide, dry chemical or foam 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 to an approved waste disposal plant.

Other Information

This product contains Ototoxic substances. Combination with noise exposure, even at safe levels, could still cause auditory injuries and hearing loss.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Toluene	108-88-3	100 %

4. FIRST-AID MEASURES

Inhalation

If inhaled, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion

Do NOT induce vomiting. Wash out mouth and lips with water. Where vomiting occurs naturally have affected person place head below hip level in order to reduce risk of aspiration. Seek immediate medical attention.

Skin

Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

Eye contact

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

First Aid Facilities

Eyewash, safety shower and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Carbon dioxide, dry chemical or foam.

Unsuitable Extinguishing Media

Do not use water jet.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including: carbon monoxide, carbon dioxide and other organic compounds.

Special Protective Equipment for fire fighters

Firefighters should wear full protective clothing and self contained breathing apparatus when fighting fires involving this product.

Specific Hazards Arising From The Chemical

Highly flammable liquid and vapour. Vapour/air mixtures may ignite explosively. Flashback along the vapour trail may occur. Runoff to sewer may create fire or explosion hazard.

Will float and can be reignited on surface water.

Hazchem Code

3YE

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES**Emergency Procedures**

Wear appropriate personal protective equipment and clothing to prevent exposure (see Section 8). Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. Place inert absorbent, non combustible material onto spillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear appropriate personal protective equipment and clothing to prevent exposure. Handle and use the material in a well-ventilated area, away from sparks, flames and other ignition sources. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Work from suitable, labelled, fire-resistant containers. Open containers carefully as they may be under pressure. Keep containers tightly closed. Flameproof equipment is necessary in areas where the product is being used. Take precautionary measures against static discharges. Earth or bond all equipment. Do not empty into drains. 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. Avoid exposure. Do not handle until all safety precautions have been read and understood. It is recommended that pregnant or breastfeeding women should not handle this product unless adequate exposure protection can be assured at all times. Female personnel planning pregnancy should be made aware of the potential risks.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations.

For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids.

Recommended Materials

For containers, or container linings use mild steel, stainless steel.

Unsuitable Materials

Natural, butyl, neoprene or nitrile rubbers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Toluene

TWA: 50 ppm,

TWA: 191 mg/m³

STEL: 150 ppm

STEL: 574 mg/m³

Notices: Sk

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

'Sk' Notice: Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

Source: Safe Work Australia

Biological Limit Values

Name: Toluene

Determinant: toluene in urine

Value: 0.03 mg/I

Sampling time: end of shift.

Name: Toluene

Determinant: toluene in blood

Value: 0.02 mg/I

Sampling time: prior to last shift of workweek

Name: Toluene
Determinant: o-Cresol in urine
Value: 0.3 mg/g creatinine
Sampling time: end of shift.

Source: American Conference of Industrial Hygienists (ACGIH)

Appropriate Engineering Controls

This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements.

Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337(series) - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material such as viton. Incidental contact/Splash protection: Nitrite rubber. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Footwear

Wear safety footwear. Final choice will vary according to individual circumstances.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Liquid

Appearance

Liquid

Colour

Colourless

Odour

Aromatic

Decomposition Temperature

Not available

Boiling Point

110 – 111°C

Solubility in Water

0.515 kg/m³

Solubility in Organic Solvents

Soluble in hydrocarbons and acetone.

Specific Gravity

Not available

PH

Not applicable

Vapour Pressure

Typical: 1 kPa (0°C); 3-3.5kPa (20°C); 12 kPa (50°C).

Vapour Density (Air=1)

3.1

Evaporation Rate

6.1 (DIN 53170, di-ethyl ether=1)

2 (ASTM D 3539, nBuAc=1)

Odour Threshold

1.74 ppm

Volatile Component

Not available

Partition Coefficient: n-octanol/water

2.65 (log Pow)

Density

871 kg/m³ (15°C) (typical)

Surface tension

28.5 mN/m (20°C) (typical) (ASTM D-971)

Flash Point

4°C (Abel)

Flammability

Flammable.

Auto-Ignition Temperature

480 - 536°C (ASTM E-659)

Flammable Limits - Lower

1.2 (V) in air

Flammable Limits - Upper

7.1 %(V) in air

Molecular Weight

92 g/mol

Kinematic Viscosity

0.63 mm²/s (25°C)

Melting/Freezing Point

-95°C (typical)

Other Information

Dielectric constant: Typical 2.4

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Reacts with incompatible materials

Conditions to Avoid

Heat, open flames and other sources of ignition. Vapour pressure.

Incompatible materials

Strong oxidizing agents.

Hazardous Decomposition Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including: carbon monoxide, carbon dioxide and other organic compounds.

Possibility of hazardous reactions

Reacts with incompatible materials

11. TOXICOLOGICAL INFORMATION

Toxicology Information

Toxicity data for material given below.

Acute Toxicity - Oral

LD50 (Rat): >2,000 mg/kg

Acute Toxicity - Inhalation

LC50 (Rat): >20 mg/l/4h

Acute Toxicity - Dermal

LD50 (Rabbit): >2000 mg/kg

Ingestion

May be fatal if swallowed and enters airways. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause severe pulmonary injury that may lead to death. May cause irritation to the mouth, throat, esophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.

Inhalation

May cause irritation to the mucous membrane and upper airways, especially where vapours or mists are generated. Symptoms include sneezing, coughing, wheezing, shortness of breath, headache, dizziness, drowsiness nausea and vomiting.

Skin

Causes skin irritation. Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.

Eye

May be irritating to eyes. The symptoms may include redness, itching and tearing.

Respiratory sensitisation

Not expected to be a respiratory sensitizer.

Skin Sensitisation

Not expected to be a skin sensitizer.

Germ cell mutagenicity

Not considered to be a mutagenic hazard.

Carcinogenicity

Not considered to be a carcinogenic hazard.

Toluene is listed as a Group 3: Not classifiable as to carcinogenicity to humans according to International Agency for Research on Cancer (IARC).

Reproductive Toxicity

May damage fertility or the unborn child. Classified as a Known or presumed human reproductive or developmental toxicant. Causes foetotoxicity in animals at doses which are maternally toxic.

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard

May be fatal if swallowed and enters airways.

Other Information

Continued inhalation may result in unconsciousness and death. Auditory system effects may include temporary hearing loss and/or ringing in the ears. Visual system disturbances may be evidenced by decreases in the ability to discriminate between colours. Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

Abuse of vapours has been associated with organ damage and death.

This product contains Ototoxic substances. Combination with noise exposure, even at safe levels, could still cause auditory injuries and hearing loss.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The available ecological data is given below.

Persistence and degradability

Readily biodegradable meeting the 10 day window criterion.

Oxidises rapidly by photo-chemical reactions in air.

Mobility

Floats on water. If product enters soil, it will be highly mobile and may contaminate groundwater.

Bioaccumulative Potential

Does not bioaccumulate significantly.

Other Adverse Effects

In view of the high rate of loss from solution, the product is unlikely to pose a significant hazard to aquatic life.

Environmental Protection

Do not discharge this material into waterways, drains and sewers.

Acute Toxicity - Fish

NOEC/NOEL > 1.0 - ≤10 mg/I (based on test data)

1 < LC/EC/IC50 ≤ 10 mg/I

Acute Toxicity - Algae

Practically non toxic: LL/EL/IL50 > 100 mg/I

Acute Toxicity - Other Organisms

Aquatic crustacea: NOEC/NOEL > 1.0 - ≤10 mg/I (based on test data)

Aquatic crustacea: Harmful: 10 < LC/EC/IC50 ≤ 100 mg/I

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Dispose of waste according to applicable local and national regulations. Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Empty containers may contain flammable residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Advise flammable nature.

14. TRANSPORT INFORMATION

Transport Information

This material is a Class 3 - Flammable Liquid according to The Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Class 3 - Flammable Liquids are incompatible in a placard load with any of the following:

- Class 1, Explosives
- Division 2.1, Flammable Gases, (Division 2.1 and Class 3 are incompatible in transport if both are in tanks or other receptacles with a capacity individually exceeding 500 L.)
- Division 2.3, Toxic Gases
- Division 4.2 Spontaneously Combustible Substances
- Division 5.1 Oxidising Agents and Division 5.2, Organic Peroxides
- Class 6 Toxic or Infectious Substances (where the flammable liquid is nitromethane)
- Class 7: Radioactive materials unless specifically exempted

Marine Transport (IMO/IMDG):

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

Class/Division: 3

UN No: 1294
Proper Shipping Name: TOLUENE
Packing Group: II
EMS :F-E, 5-D
Special Provisions: None

Air Transport (ICAO/IATA):

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

Class/Division: 3

UN No: 1294

Proper Shipping Name: TOLUENE

Packing Group: II

Packaging Instructions (passenger & cargo): 353

Packaging Instructions (cargo only): 364

Hazard Label: FLAMMABLE LIQUID

Special Provisions: None

U.N. Number

1294

UN proper shipping name

TOLUENE

Transport hazard class(es)

3

Packing Group

II

Hazchem Code

3YE

IERG Number

16

IMDG Marine pollutant

No

Transport in Bulk

Not available

Special Precautions for User

Not available

15. REGULATORY INFORMATION

Regulatory information

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GI-15) including Work, Health and Safety Regulations, Australia.

Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule

S6

Australia (AICS)

All components of this product are listed on the Inventory or exempted.

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS Reviewed: January 2021

Supersedes: February 2016

References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.

Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants.

Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).

Globally Harmonised System of Classification and Labelling of Chemicals.

Code of Practice: Managing Noise and Preventing Hearing Loss at Work.

END OF SDS