

MATERIAL SAFETY DATA SHEET

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Issue Date:

1- Chemical Product Information and Company Identification.

Product Name: Toluene, AnStan® GC Reference standard.
Synonym: Toluene.
Product code: BS10108.
CAS Number: 108-88-3.
Company Name: Briti Scientific.
Company Address: Plot No: 78/B/13, SY-79, Phase-VI, Jeedimetla, Hyderabad- 500 055.
Telangana, India.

Section 2- Composition / Information on Ingredients.

| CAS No. | Chemical Name | Mol. Formula |
|-----------|---------------|-------------------------------|
| 108-88-3. | Toluene. | C ₇ H ₈ |

Section 3- Hazards Identification.

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Skin irritation (Category 2), H315

Reproductive toxicity (Category 2), H361d

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

Specific target organ toxicity - repeated exposure (Category 2), H373

Aspiration hazard (Category 1), H304

For the full text of the H-Statements mentioned in this Section, see Section 16

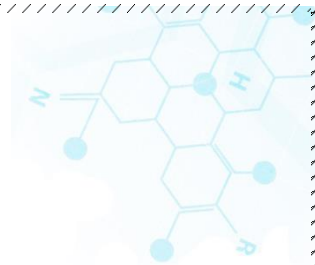
Classification according to EU Directives 67/548/EEC or 1999/45/EC

| | | |
|----|------------------|-------------|
| F | Highly flammable | R11 R63 |
| Xn | Harmful | R48/20, R65 |
| Xi | Irritant | R38 R67 |

For the full text of the R-phrases mentioned in this Section, see Section 16.



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Label elements

Labelling according Regulation (EC) No 1272/2008



Signal word 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.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s)

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.
P261 Avoid breathing vapours.
P281 Use personal protective equipment as required.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331 Do NOT induce vomiting

Other hazards

This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher

Section 4- First Aid Measures.

Description of first aid measures

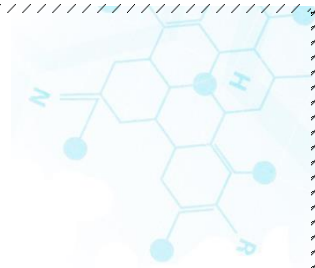
General advice

Consult a physician. Show this safety data sheet to the doctor in attendance

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician





In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

Section 5- Fire Fighting Measures.

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Carbon oxides

Advice for fire-fighters

Wear self-contained breathing apparatus for fire fighting if necessary

Further information

Use water spray to cool unopened containers.

Section 6- Accidental Release Measures.

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

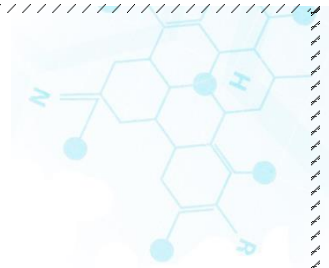
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations

Section 7- Handling and Storage.

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.





Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas. Storage class (TRGS 510): Flammable liquids

Section 8- Exposure Control/Personal Protection.

Control parameters

Components with workplace control parameters

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

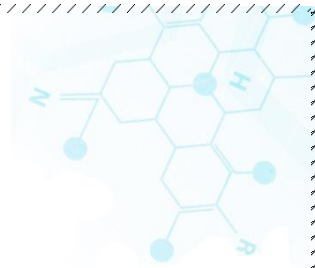
Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).





Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided

Section 9- Physical and Chemical Properties.

Information on basic physical and chemical properties

- a) Appearance Form: liquid Colour: colourless
- b) Odour aromatic
- c) Odour Threshold No data available
- d) pH No data available
- e) Melting point/freezing Melting point/range: -93 °C point
- f) Initial boiling point and 110 - 111 °C boiling range
- g) Flash point 4.0 °C - closed cup
- h) Evaporation rate No data available
- i) Flammability (solid, gas) No data available
- j) Upper/lower Upper explosion limit: 7 %(V) flammability or Lower explosion limit: 1.2 %(V) explosive limits
- k) Vapour pressure 29.1 hPa at 20,0 °C
- l) Vapour density No data available
- m) Relative density 0.865 g/mL at 25 °C
- n) Water solubility 0.5 g/l at 15 °C
- o) Partition coefficient: n- No data available octanol/water
- p) Auto-ignition 535.0 °C temperature
- q) Decomposition No data available temperature
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

Section 10- Stability and Reactivity.

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

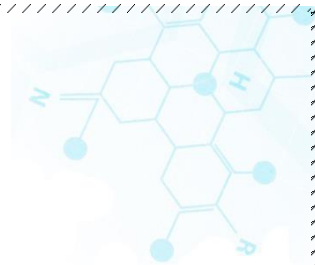
Possibility of hazardous reactions

No data available

Conditions to avoid

Heat, flames and sparks.





Incompatible materials

Oxidizing agents, Strong bases

Section 11- Toxicological Information.

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - > 5.580 mg/kg

LC50 Inhalation - Rat - 4 h - 12.500 - 28.800 mg/m³

LD50 Dermal - Rabbit - 12.196 mg/kg

Skin corrosion/irritation

Skin – Rabbit Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation

Eyes – Rabbit Result: No eye irritation (OECD Test Guideline 405)

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Toluene)

Reproductive toxicity

Damage to fetus possible

Suspected human reproductive toxicant

Reproductive toxicity - Rat - Inhalation

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Experiments have shown reproductive toxicity effects in male and female laboratory animals.

Developmental Toxicity - Rat - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Additional Information

RTECS: XS5250000

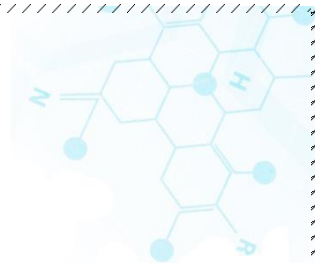
Lung irritation, chest pain, pulmonary edema, Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.,

Central nervous system



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Section 12- Ecological Information.

Toxicity

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 7,63 mg/l - 96 h
NOEC - Pimephales promelas (fathead minnow) - 5,44 mg/l - 7 d

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 8,00 mg/l - 24 h

Immobilization EC50 - Daphnia magna (Water flea) - 6 mg/l - 48 h

Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 245,00 mg/l - 24 h
EC50 - Pseudokirchneriella subcapitata (green algae) - 10,00 mg/l - 24 h

Persistence and degradability

Biodegradability Result: - Readily biodegradable.

Bio accumulative potential

Bioaccumulation Leuciscus idus (Golden orfe) - 3 d - 0,05 mg/l

Bio concentration factor (BCF): 90

Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

13- Disposal Considerations.

Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

Section 14- Transport Information.

UN number

ADR/RID: 1294 IMDG: 1294 IATA: 1294

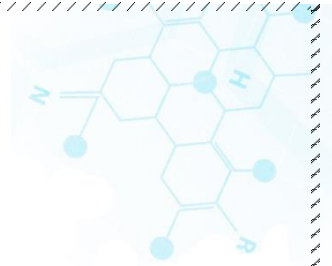
UN proper shipping name

ADR/RID: TOLUENE

IMDG: TOLUENE

IATA: TOLUENE





Transport hazard class (es)

ADR/RID: 3 IMDG: 3 IATA: 3

Packaging group

ADR/RID: II IMDG: II IATA: II

Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

15-Other Regulatory Information.

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

Section 16- Other Information.

Briti Scientific provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

