

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

|              |  |
|--------------|--|
| Product name | TOLUENE  |
| CAS-No.      | 108-88-3   |
| Product code | AH1348, AR1207, CG1207, GP1207, IR1347, LC1347, PC1347, PS1347, RP1347, SM1207 |

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Chemical for analysis and production.

**1.3 Details of the supplier of the safety data sheet**

|                  |   |
|------------------|---|
| Company          | RCI LABSCAN LIMITED.                              |
|                  | 24 Rama 1 Road, Pathumwan, Bangkok 10330 Thailand |
| Telephone number | (662) 613-7911-4                                  |
| Fax number       | (662) 613-7915                                    |

**1.4 Emergency Telephone Number**

Emergency phone (662) 613-7911-4

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Flammable liquids (Category 2), H225

Aspiration hazard (Category 1), H304

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

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

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



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)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

|                    |  |
|--------------------|--|
| P210               | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.           |
| P233               | Keep container tightly closed.   |
| P240               | Ground and bond container and receiving equipment.   |
| P241               | Use explosion-proof [electrical/ventilating/lighting] equipment.   |
| P242               | Use non-sparking tools.  |
| P243               | Take action to prevent static discharges.  |
| P260               | Do not breathe vapours.  |
| P264               | Wash hand thoroughly after handling.   |
| P271               | Use only outdoors or in a well-ventilated area.  |
| P280               | Wear protective gloves/protective clothing/eye protection/face protection.                               |
| P301 + P310        | IF SWALLOWED: Immediately call a POISON CENTER/doctor.   |
| P302 + P352        | IF ON SKIN: Wash with plenty water.  |
| 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.                               |
| P308 + P313        | IF exposed or concerned: Get medical advice/attention.   |
| P314               | Get medical advice/attention if you feel unwell.   |
| P331               | Do NOT induce vomiting.  |
| P332 + P313        | If skin irritation occurs: Get medical advice/attention.   |
| P362 + P364        | Take off contaminated clothing and wash it before reuse.   |
| P370 + P378        | In case of fire: Use carbon dioxide, dry chemical or foam to extinguish.                                 |
| P403 + P235        | Store in a well-ventilated place. Keep cool.   |
| P405               | Store locked up.   |

## 2.3 Other hazards

None

### **SECTION 3: Composition/information on ingredients**

### 3.1 Substances

|          |  |              |   |                  |          |
|----------|--|--------------|---|------------------|----------|
| Synonyms | Methylbenzene, Methyl benzol, Toluol, Toluole. |              |   |                  |          |
| CAS-No   | EC-No  | EC-Index-No  | Formula                                       | Molecular Weight | Weight % |
| 100-88-2 | 202-625-2                                      | 601-001-00-2 | C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> | 92.14 g/mol      | 99       |

Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component                | Concentration | Classification  |
|--------------------------|---------------|---|
| <b>Toluene</b>           |               |   |
| CAS-No 108-88-3          |               | Flammable liquids (Category 2), H225  |
| EC-No 203-625-9          |               | Aspiration hazard (Category 1), H304  |
| EC-Index-No 601-021-00-3 |               | 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                       |

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

## SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

|              |   |
|--------------|---|
| Inhalation   | Move to fresh air in case of accidental inhalation of vapors. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus.   |
| Skin contact | Remove contaminated clothing and wash affected skin with soap and water. If signs of poisoning appear, treat as for inhalation. Obtain medical attention. Wash contaminated clothing before reuse. Contaminated combustible material, e.g. clothing ignites more readily and burns fiercely.  |
| Eye contact  | If the substance has got into the eyes, immediately wash out with plenty of water at least 15 minutes. Obtain medical attention.  |
| Ingestion    | Rinse mouth. Do not induce vomiting. Keep patient warm. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing or under medical supervision. No artificial aspiration mouth to mouth or mouth to nose. Use suitable instruments/apparatus. Obtain medical attention. Never give anything by mouth to an unconscious person. |

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

Not Available

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Extinguish with carbon dioxide, dry chemical or foam. In the event of fire, cool tanks with water spray.

#### 5.2 Special hazards arising from the substance or mixture

Vapors may form explosive mixture with air. Flash back possible over considerable distance.

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

#### 5.4 Further information

Standard procedure for chemical fires. Take measures to prevent electrostatic charging. Prevent firefighting water from entering surface water or groundwater.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not breathe vapors or spray mist. Wear a positive-pressure supplied-air respirator, flame retardant antistatic protective clothing. Shut off leaks if without risk. Keep people away from and upwind of spill/leak.

#### 6.2 Environmental precautions

Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil, advise police.

#### 6.3 Methods and materials for containment and cleaning up

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silica gel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose of promptly.

## 6.4 Reference to other sections

For disposal see **Section 13**.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Keep container tightly closed. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not empty into drains.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry, cool and well ventilated place. Keep away from heat and sources of ignition. Keep out of direct sunlight and away from incompatible materials. Store in original container. Electrical equipment should be protected to the appropriate standard.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Derived No Effect Level (DNEL)

| Application Area | Health Effects             | Exposure     | Value                  |
|------------------|----------------------------|--------------|------------------------|
| Worker           | Acute Local effects        | Inhalation   | 343 mg/m <sup>3</sup>  |
| Worker           | Acute Systemic effects     | Inhalation   | 384 mg/m <sup>3</sup>  |
| Worker           | Long-term Local effects    | Inhalation   | 192 mg/m <sup>3</sup>  |
| Worker           | Long-term Systemic effects | Inhalation   | 192 mg/m <sup>3</sup>  |
| Worker           | Long-term Systemic effects | Skin contact | 384 mg/kg Body weight  |
| Consumer         | Acute Local effects        | Inhalation   | 226 mg/m <sup>3</sup>  |
| Consumer         | Acute Systemic effects     | Inhalation   | 226 mg/m <sup>3</sup>  |
| Consumer         | Long-term Systemic effects | Ingestion    | 8,13 mg/kg Body weight |
| Consumer         | Long-term Systemic effects | Inhalation   | 56,5 mg/m <sup>3</sup> |
| Consumer         | Long-term Systemic effects | Skin contact | 226 mg/kg Body weight  |

#### Predicted No Effect Concentration (PNEC)

| Compartment            | Value       |
|------------------------|-------------|
| Fresh water            | 0.68 mg/l   |
| Fresh water sediment   | 16.39 mg/kg |
| Sewage treatment plant | 13.61 mg/l  |
| Soil                   | 2.89 mg/kg  |

### 8.2 Exposure controls

#### Appropriate engineering controls

The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Ventilation hoods and fans required when working with organic solvents or in hot melt applications.

#### Individual protection measures (Personal protective equipment, PPE)

##### Eye/face protection

Goggles giving complete protection to eyes.

##### Skin protection

Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Handle with gloves

- Full contact wears gloves from viton material.
- Splash contact wears gloves from nitrile rubber material.

The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

## Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (EN 141 or EN 14387).

## Environmental exposure controls

Prevent liquid entering sewers, basements and workpits.

## SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

## SECTION 10: Stability and reactivity

## 10.1 Reactivity

Heat sensitive. Explosive with air in a porous/gaseous state.

## 10.2 Chemical stability

Chemical Stability: Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Risk of explosion in contact with nitric acid, 1,3-dichloro-5,5-dimethyl-2,4-imidazolidone, acetic acid, halogen-halogen compounds, non-metallic halides, organic nitro compounds, fuming sulfuric acid, sulfur dichloride, silver perchlorates, nitrogen dioxide, uranium hexafluoride.

The substance can react dangerously with strong acids, strong oxidizing agents, bromine trifluoride, heat, sulphur (heat).

The substance forms an explosive mixture with air on heat.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Halogen compounds, nitric acid, nitrogen oxide, organic nitro compounds, oxidizing agent, uranium hexafluoride, sulfur, fuming sulfuric acid

Unsuitable working materials: various plastic, rubber.

**10.6 Hazardous decomposition products**

Carbon monoxides, Carbon dioxides (Hazardous decomposition products from under fire condition).

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

LC<sub>50</sub> (inhalation, rat): 28.1 mg/l/4 h.

LD<sub>50</sub> (oral, rat): 636 mg/kg.

LD<sub>50</sub> (dermal, rabbit): 12124 mg/kg.

**Acute oral toxicity**

Absorption

Symptoms: nausea, vomiting. Risk of aspiration upon vomiting.

**Acute inhalation toxicity**

Absorption

Symptoms: Irritation in the respiratory tract, headache, drowsiness, dizziness.

**Skin corrosion/irritation**

Slight irritation. Degreasing effect on the skin, possibly followed by secondary inflammation. Danger of skin absorption.

**Serious eye damage/eye irritation**

Slight irritation, mucosal irritations.

**Respiratory or skin sensitization**

Not Available

**Germ cell mutagenicity**

Mutagenicity; mammal cell test is negative (in vitro).

Ames test is negative.

**Carcinogenicity**

Not Available

**Reproductive toxicity**

Not Available

**Teratogenicity**

Suspected of damaging the unborn child

**Specific target organ toxicity (STOT) - single exposure**

May cause drowsiness or dizziness.

**Specific target organ toxicity (STOT) - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

Not Available

**Further information**

After uptake of large quantities; pneumonia, respiratory paralysis.

After long term exposure to the chemical: dermatitis. Systemic effects; after absorption of large quantities: CNS disorders, inebriation, spasms, unconsciousness, respiratory arrest, cardiovascular failure, death.

The product should be handled with the care usual when dealing with chemicals.

**SECTION 12: Ecological information****12.1 Toxicity**

|                                 |  |
|---------------------------------|--|
| Toxicity to fish                | LC <sub>50</sub> <i>Onchorhynchus mykiss</i> : 5.8 mg/l /96h.          |
| Toxicity to daphnia             | EC <sub>50</sub> <i>Daphnia magna</i> : 6mg/l/48h.                     |
| and other aquatic invertebrates |  |
| Toxicity to algae               | IC <sub>50</sub> <i>Pseudokirchneriella subcapitata</i> : 12 mg/l/72h. |
| Toxicity to bacteria            | EC <sub>50</sub> <i>Photobacterium phosphoreum</i> : 20 mg/l/30 min.   |

**12.2 Persistence and degradability**

|                  |               |
|------------------|---------------|
| Biodegradability | Not Available |
|------------------|---------------|

**12.3 Bioaccumulative potential**

|   |  |
|---|--|
| Partition coefficient (n-octanol/water) | log Pow: 2.65 (experimental)                         |
|   | No bioaccumulation is to be expected (log P o/w 1-3) |

**12.4 Mobility in soil**

Not Available

**12.5 Other adverse effects**

Biological effects; Harmful effect on aquatic organisms. Toxic effect on fish and plankton. Change in the flavour characteristic of fish protein.

Do not allow to enter waters, waste water or soil.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

**SECTION 14: Transport information****Land Transport (ADR/RID)**

|                            |         |
|----------------------------|---------|
| UN Number                  | 1294    |
| UN proper shipping name    | TOLUENE |
| Transport hazard class(es) | 3       |

|                              |     |
|------------------------------|-----|
| Packing group                | II  |
| Environmental hazards        | No  |
| Special precautions for user | Yes |

**Sea transport (IMDG)**

|                              |         |
|------------------------------|---------|
| UN Number                    | 1294    |
| UN proper shipping name      | TOLUENE |
| Transport hazard class(es)   | 3       |
| Packing group                | II      |
| Marine pollutant             | No      |
| Special precautions for user | Yes     |
| EmS                          | F-E S-D |

**Air transport (IATA)**

|                              |         |
|------------------------------|---------|
| UN Number                    | 1294    |
| UN proper shipping name      | TOLUENE |
| Transport hazard class(es)   | 3       |
| Packing group                | II      |
| Environmental hazards        | No      |
| Special precautions for user | No      |

**River transport (AND/ADNR)**

(Not examined)

**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

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

Not Available

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3**

|       |  |
|-------|--|
| 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. |

**Recommended restrictions**

Take notice of labels and safety data sheets for the working. Chemicals Take necessary action to avoid static electricity discharge.

**Reference**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Labelling according to EC Directives 67/548 EEC and Regulation (EC) No 1272/2008.

Transportation information according to Recommendations on the Transport of Dangerous Goods, Model Regulations. Twelfth revised edition. United Nations.

Institute for Occupational Safety and Health of the German Social Accident Insurance in Sankt Augustin/Germany, Source: IFA for Databases on hazardous substances (GESTIS).

**Further information**

Contact to RCI Labscan Limited.

**Revision Date**

01/04/2020

---

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 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.