MATERIAL SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: Toluene
CAS number: 108-88-3
EC number: 203-625-9
Index number: 601-021-00-3
Reach number: 01-2119471310-51-XXXX
Product number: REA012-A, REA012-W, TOL005, TOL010
Brand: Solmedia Ltd

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

Laboratory Chemicals

1.3 Details of the supplier of the safety data sheet

Name of Supplier: Solmedia Ltd.
Address of Supplier: Unit 2, Vernon Drive
Battlefield Enterprise Park
Shrewsbury
SY1 3TF
UK
Telephone: 0844 80 80 900
Email: labsupplies@solmedialtd.com

1.4 Emergency telephone number

Emergency Phone: +44 (0)844 80 80 900

SECTION 2: Hazard's identification

2.1 Classification of the substance or mixture

Classification under CLP: Regulation (EC) No. 1272/2008 [CLP]

Hazard Classes	Hazard category	Hazard Statements
Flammable liquids	Category 2	H225
Skin irritation	Category 2	H315
Reproductive toxicity	Category 2	H361d
Specific target organ toxicity (STOT) – single (SE) exposure, central nervous system	Category 3	H336
STOT – Repeated exposure (RE), central nervous system	Category 2	H373
Aspiration hazard	Category 1	H304
Long-term (chronic) aquatic hazard	Category 3	H412

2.2 Label elements

Hazard Statements	
H225	Highly flammable liquid and vapour
H315	May be fatal if swallowed and enters airways
H361d	Causes skin irritation
H336	May cause drowsiness or dizziness
H373	Suspected of damaging the unborn child
H304	May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled
H412	Harmful to aquatic life with long lasting effects

Signal words: Danger

Hazard pictograms:

GHS02: Flame

GHS07: Exclamation mark

GHS08: Health Hazard

Precautionary statements:

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.
P273 – Avoid release to the environment.
P301 + P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303 + P361 + P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P331 – Do NOT induce vomiting.
Fire and Storage:
P370+P378: In case of fire: Use foam, carbon dioxide, dry powder, or water fog to extinguish.
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.

2.3 Other hazards

Other hazards: In use, may form flammable / explosive vapour-air mixture.
PBT: This product is not identified as a PBT/vPvB substance.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous ingredients Classification according to Regulation (EC) No. 1272/2008 [CLP]

			Classification (Regulation (EC) No 1272/2008 [CLP]	
Hazardous Components		Amount [%]	Hazard class/ Hazard category	Hazard Statements
Name:	Toluene	~99%	FLAM LIQ. CAT. 2; SKIN IRRIT. CAT. 2; REPR CAT. 2; ASP. TOX. CAT. 1; AQUA CHRONIC. CAT. 3.	H225 H315 H361d H336 H373 H304 H412
CAS NO.	108-88-3			
EC-NO.	203-625-9			
Index NO.	601-021-00-3			

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician. If unconscious but breathing normally, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

Skin contact: After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

Eye contact: In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

Inhalation: Call a POISON CENTRE/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

ABC-powder, Carbon dioxide (CO2), Nitrogen

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon oxides. Vapour may spread across floor. Forms explosive mixture with air at ambient temperatures.

5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives.
Special protective equipment for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional Information:

Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use caution when applying carbon dioxide in confined spaces.
Carbon dioxide can displace oxygen.
Use water spray jet to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In case of major fire and large quantities: Remove persons to safety.
Keep away from sources of ignition and heat.

6.2 Environmental precautions

Discharge into the environment must be avoided. Explosive risk.

6.3 Methods and materials for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Collect in closed and suitable containers for disposal.
Isolate form ignition sources. Absorb with non-combustible spillage material.

6.4 Reference to other sections

Clear spills immediately.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Prevent contact with sources of ignition. All work processes must always be designed so that the following is as low as possible:
Inhalation, Skin contact, Eye contact
Use extractor hood (laboratory).
If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15 – 25 degrees C
Storage class: no data available
Keep container tightly closed and in a well-ventilated place.
Keep/Store only in original container.
Storage class : 3 : Flammable liquids.

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

UK - EH40/2005 Workplace exposure limits (WEL):

Component	CAS NO.	State	8-hour TWA	15 min. STEL
Toluene	108-88-3	UK	50ppm (191 mg/m3)	100ppm (384 mg/m3)
Toluene	108-88-3	EU	50ppm (191 mg/m3)	100ppm (384 mg/m3)

DNEL: Derived no effect level/DMEL – Derived minimum effect level

CAS: 108-88-3 Toluene		
Oral	long-term systemic effects	8.13 mg/kg bw/day (general population)
Dermal	Long-term systemic effects	226 mg/kg bw/day (general population) 384 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	226 mg/kg bw/day (general population) 192 mg/m³ (worker)

	Short-term local effects	226 mg/m³ (general population) 384 mg/m³ (worker)

PNEC – Predicted no effect concentration – Toluene CAS NO. 108-88-3

Fresh water	Aquatic Water intermittent release	Marine water	Marine water	Marine sediment	Soil
0.68 mg/L	0.68 mg/L	0.68 mg/L	0.68 mg/L	16.39 mg/kg	2.89 mg/kg

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protective equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique. For gloves involving total immersion 1.0mm thickness (if available) are recommended,

(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.

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

Body Protection

Impervious 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

Respiratory protection required if workplace exposure limits cannot be controlled/if ventilation or exhaust is not adequate. For nuisance exposures use type OV/AG (US) or type ABEK

(EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection:

Goggles recommended during refilling: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

Additional Information

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Control of environmental exposure

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State: Liquid
Colour: Colourless
Odour: Benzene like
Odour threshold: No data available
pH: No data available
Melting point/freezing point:
-93 degrees C
Initial boiling point and boiling range:
110-111°C
Flash point: 4.4 °C (closed cup)
Evaporation rate: No data available
Flammability (solid, gas):
Highly flammable liquid and vapour.
Flammability or explosive limits
Lower explosion limit:
No data available
Upper explosion limit:
No data available
Vapour pressure: No data available
Vapour density: No data available
Relative density: 0.865 g/cm³ (20 °C)
Solubility(ies)
Water solubility:
No data available
Soluble (g/L) in Ethanol:
No data available
Partition coefficient:
n-octanol/water:
No data available
Auto-ignition temperature:

No data available

Decomposition temperature:

No data available

Viscosity

Kinematic viscosity:

No data available

Dynamic viscosity:

No data available

Explosive properties: Not applicable

Oxidising properties: Not applicable

9.2 Other safety information

Bulk density: No data available

Refraction index: No data available

Dissociation constant: No data available

Surface tension: No data available

Henry's Law Constant: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapour may form explosive mixture with air.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

May build pressure within sealed containers if mixed with a substance that causes a reaction. Risk of explosion with following chemicals; fuming sulfuric acid, Nitric acid, silver perchlorates, nitrogen dioxide, nonmetallic halides, halogen-halogen compounds, uranium hexafluoride organic nitro compounds, Violent reactions possible with: Strong acids Strong oxidizing agents sulfur with Heat

10.4 Conditions to avoid

Heat. Flames. Sources of ignition

10.5 Incompatible materials

Strong oxidising agents. Concentrate nitric and sulphuric acids.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Component	LD50 Oral	LC50 Inhalation (4h) Vapour	LD50 Dermal
Toluene	5580 mg/kg (Rat)	25.7 mg/L (Rat)	5000 mg/kg (Rabbit)

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Symptoms / routes of exposure

Skin contact: Causes skin irritation

Eye contact: causes serious eye irritation

Ingestion: May be harmful if swallowed Causes burns

Inhalation: May be harmful if inhaled. The substance is destructive to the respiratory tract and mucous membranes.

SECTION 12: Ecological information

12.1 Ecotoxicity

Ecotoxicity values: Toluene

Aquatic toxicity	Dose (hours/days)	Species
Acute Fish toxicity	LC50 (50% lethal concentration): 5.5 mg/L 96h	Coho salmon
Acute Toxicity to daphnia and other aquatic invertebrates	EC50 (50% effective concentration): 3.78 mg/L 48h	Ceriodaphnia dubia (Water flea)
Chronic fish toxicity	NOEC (No observed effective concentration): 1.39 mg/L 40d	Oncorhynchus kisutch
Chronic Toxicity to daphnia and other aquatic invertebrates	NOEC (No observed effective concentration): 0.74 mg/L – 7d	Ceriodaphnia dubia (Water flea)
Toxicity to bacteria	EC50: 84 mg/L 24h	N/A

12.2 Persistence and degradability

Biodegradability 86% readily biodegradable, aerobic – exposure time 20d.

12.3 Bioaccumulative potential

Bioaccumulation leuciscus idus (Golden orfe) – 3d – 0.05 mg/L (Toluene). Bioconcentration factor (BCF) : 90

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This product is not identified as a PBT/vPvB substance.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal operations:

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal.
Waste code product: no data available
Handle contaminated packages in the same way as the substance itself.

Recovery operations: Not applicable.

Disposal of packaging: Dispose of as unused product.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

SECTION 14: Transport information

14.1 UN number

UN1294

14.2 UN proper shipping name

TOLUENE

14.3 Transport hazard class(es)

3

Hazard label(s): 3

14.4 Packaging group

II

14.5 Environmental hazards

No

14.6 Special precautions for user

Tunnel restriction code:

D/E

(Passage forbidden through tunnels of category D when carried in bulk or in tanks. Passage forbidden through tunnels of category E.)

SECTION 15: Regulatory information

15.1 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.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

SECTION 16: Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Solmedia Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.