

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

1.1 Product identifier

Product name 2, 2, 4 – TRIMETHYLPENTANE
CAS-No. 540-84-1
Product code AR1206, GP1206, IR1206, LC1206, PC1206, RP1206

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
Skin irritation (Category 2), H315
Specific target organ toxicity - single exposure (Category 3), H336
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410
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
Xi	Irritant	R38
Xn	Harmful	R65
		R67
N	Dangerous for the environment	R50/53

For the full text of the R-phrases 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.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

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.
 P261 Avoid breathing vapours.
 P264 Wash hand thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/eye protection/face protection.
 P301 + P310 IF SWALLOWED: Immediately 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 victim to fresh air and keep at rest in a position comfortable for breathing.
 P312 Call a POISON CENTER or doctor/physical if you feel unwell.
 P331 Do NOT induce vomiting.
 P332 + P313 If skin irritation occurs: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reuse.
 P391 Collect spillage.
 P370 + P378 In case of fire: Use carbon dioxide, dry chemical or foam for extinction.
 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 Isooctane, Isobutyltrimethylpentane.

CAS-No	EC-No	EC-Index-No	Formula	Molecular Weight	Weight %
540-84-1	208-759-1	601-009-00-8	$(\text{CH}_3)_2\text{CHCH}_2\text{C}(\text{CH}_3)_3$	114.23 g/mol	>99

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

Component	Concentration	Classification
2, 2, 4-Trimethylpentane		
CAS-No 540-84-1 EC-No 208-759-1 EC-Index-No 601-009-00-8	>99%	Flammable liquids (Category 2), H225 Skin irritation (Category 2), H315 Specific target organ toxicity - single exposure (Category 3), H336 Aspiration hazard (Category 1), H304 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410

Hazardous ingredients according to Directive 1999/45/EC

Component	Concentration	Classification
2, 2, 4-Trimethylpentane		
CAS-No 540-84-1 EC-No 208-759-1 EC-Index-No 601-009-00-8	>99%	F, Highly flammable, R11 Xi, Irritant, R38 Xn, Harmful, R65 R67 N, Dangerous for the environment, R50/53

For the full text of the H-Statements and R-Phrases 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

After swallowing, caution if victim vomits. Risk of aspiration. Keep airways free. In case of spontaneous vomiting: Risk of aspiration. Pulmonary failure possible. Call in physician.

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 at room temperature 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	Long-term Systemic effects	Inhalation	2035 mg/m ³
Worker	Long-term Systemic effects	Skin contact	773 mg/kg Body weight
Consumer	Long-term Systemic effects	Ingestion	699 mg/kg Body weight
Consumer	Long-term Systemic effects	Inhalation	608 mg/m ³
Consumer	Long-term Systemic effects	Skin contact	699 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

Not available

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 nitrile rubber material.
- Splash contact wears gloves from polychloroprene 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**

Appearance: From	Liquid
: Color	Colorless
Odour	Benzene-like
Odour Threshold	Not Available
pH	Neutral
Melting point/range	-107 °C
Boiling point/range	99°C at 1013 hPa
Flash point	-12 °C (closed cup)
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Explosion limits: lower	1 % (V)
upper	6 % (V)
Vapor Pressure	51 hPa at 20°C
Relative Vapor Density	3.9
Density	0.690 g/ml at 20°C
Water solubility	0.56 g/l at 25°C
Partition coefficient (n-octanol/water)	log Pow: 4.09
Auto-Ignition temperature	410 °C
Decomposition Temperature	Not Available
Viscosity	0.50 mPa.s at 20°C
Explosive properties	Not Explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.

SECTION 10: Stability and reactivity**10.1 Reactivity**

Highly inflammable. Unsuitable working materials: various plastics. Explosible with air in a vaporous/gaseous state.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

The substance forms an explosive mixture with air.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents

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**

LD₅₀ (oral, rat): >2500 mg/kg

LC₅₀ (inhalation, rat): 37.5mg/l /4h

Acute oral toxicity

After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting) can result in a condition resembling pneumonia (chemical pneumonitis). Damage of lung.

Acute inhalation toxicity

Irritations of mucous membranes, drowsiness.

Skin corrosion/irritation

Irritations: degreasing effect on the skin, possibly followed by secondary inflammation.

Serious eye damage/eye irritation

Slight irritations.

Respiratory or skin sensitization

Not Available

Germ cell mutagenicity

Mutagenicity (mammal cell test): negative (in vitro).

Carcinogenicity

Not Available

Reproductive toxicity

Not Available

Teratogenicity

Not Available

Specific target organ toxicity (STOT) - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity (STOT) - repeated exposure

Not Available

Aspiration hazard

May cause pulmonary edema and pneumonitis.

Further information

Damage of lung.

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

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish LC₀ L.idus: 500 mg/ l/ 48h.

Toxicity to bacteria EC₅ Ps. Putida: 10000 mg/l.

12.2 Persistence and degradability

Biodegradability Distribution preferentially in air.

12.3 Bioaccumulative potential

Partition coefficient (n-octanol/water) log Pow: 4.09 (experimental)
An appreciable Bioaccumulation potential is to be expected
(log P o/w >3)

12.4 Mobility in soil

Not Available

12.5 Other adverse effects

Biological effects: High toxic for aquatic organisms. May cause long term adverse effects in the aquatic environment. Endangers drinking water supplies if swallowed to enter soil and or waters in large quantities. 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	1262
UN proper shipping name	OCTANES
Transport hazard class(es)	3
Packaging group	II
Environmental hazards	Yes
Special precautions for user	Yes

Sea transport (IMDG)

UN Number	1262
UN proper shipping name	OCTANES
Transport hazard class(es)	3

Packaging group	II
Marine pollutant	Yes
Special precautions for user	Yes
EmS	F-E S-E

Air transport (IATA)

UN Number	1262
UN proper shipping name	OCTANES
Transport hazard class(es)	3
Packaging group	II
Environmental hazards	Yes
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.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3

F	Highly flammable.
Xi	Irritant
Xn	Harmful
N	Dangerous for the environment.
R11	Highly flammable.
R38	Irritating to skin.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.

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

01/02/2015

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.