Safety Data Sheet

SDS has been prepared in accordance with
Regulation (EC) No. 453/2010

This Safety Data Sheet is written in reference to a sealed glass ampoule containing 10 ml of the product named below.

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name: 2,2,4 Trimethylpentane

Synonyms:	**Product type:**	**Date revised:** Jun 2022
Iso octane (iC8)	Liquid density standard	**Previous:** Feb 2020
EC No: 208-759-1	**CAS No.:** 540-84-1	

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

Relevant identified uses: For use in the calibration of density meters.

1.3 Details of the supplier of the Safety Data Sheet

Company: H&D Fitzgerald Ltd.
Address: Cefn Du, Tremeirchion, St Asaph, Denbighshire, LL17 0US, UK
Telephone #: +44 (0)1352 720 774
Email address: admin@density.co.uk

1.4 Emergency telephone number

+44 (0)1352 720 774

Section 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No1272/2008 [CLP]:
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

2.2 Label elements

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
	P261	Avoid breathing dust/fume/gas/mist/vapours/spray
	P273	Avoid release to the environment

	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor/physician
	P331	Do NOT induce vomiting
	P501	Dispose of contents/ container to an approved waste disposal plant.
2.3 Other hazards		This substance/ mixture contains no components considered either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3 Composition / Information on ingredients

Substance name: 2,2,4 Trimethylpentane

Synonyms: Iso octane (iC8)

C.A.S. No.	EINECS No.	Index-No. in CLP Annex IV	Classification	Concentration
540-84-1	208-759-1	601-009-00-8	Flam. Liq. 2; Skin Irrit. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H225, H315, H336, H304, H400, H410 M-Factor - Aquatic Acute: 10	<= 100%

For full text of H-statements mentioned in this section, see Section 16.

Formula: C_8H_{18}

Molecular Weight: 114.23 g/mol

Section 4 First Aid measures

4.1 Description of first aid measures

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

Following inhalation: Move the person into fresh air. If not breathing give artificial respiration. Consult a physician.

Following ingestion: Do NOT induce vomiting.

Never give anything by mouth to an unconscious person.

Rinse mouth with water and consult a physician without delay.

Following eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

Consult a physician.

Following skin contact: Wash off with soap and plenty of water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Section 5 Fire fighting measures

5.1 Extinguishing media

Extinguishing media: For small (incipient) fires, use media such as “alcohol” foam, dry chemical or carbon dioxide.

For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Unsuitable media: None.

5.2 Special hazards arising from the substance or mixture	
	Carbon oxides. Flash back possible over considerable distance. Container explosion may occur under fire conditions.
5.3 Advice for firefighters	
Special protective equipment for fire-fighters:	Wear protective clothing and self contained breathing apparatus.
5.4 Further information	Use water spray to cool unopened containers

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	
Protective equipment:	Wear safety glasses with side shields and gloves.
Personal precautions:	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.
6.2 Environmental precautions	
	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3 Methods and material for containment and cleaning up	
	Ventilate area. Contain spillage, and then collect with non-combustible material and place in a suitable container for disposal according to local/national regulations.
6.4 Reference to other sections	
	For disposal see section 13.

Section 7 Handling and storage

7.1 Precautions for safe handling	
Handling precautions:	Avoid contact with eyes and skin. Avoid inhalation of vapour or mist. Use personal protective equipment. Handle in accordance with good industrial hygiene and safety practise. Keep away from from sources of ignition – No smoking Take measures to prevent the build up of electrostatic charge. For precautions see 2.2.
7.2 Conditions for safe storage, including any incompatibilities	
Storage precautions:	Store ampoule in the outer packaging until ready to use. Store in a cool place (less than 25°C). Do not store the ampoule once opened, dispose of after use.
7.3 Specific end use(s)	
Recommendations:	Liquid density standard for calibration of density meters.

Section 8 Exposure controls and personal protection

8.1 Control parameters

Components with work place control parameters

Contains no components with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Respiratory protection:	Use in a well ventilated area.
Eye/Face protection:	Wear safety glasses with side shields conforming to EN166.
Hand protection:	Handle with gloves conforming to EN374.
Other skin protection:	Use of protective clothing is good industrial practise.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practise. Wash hands with soap before breaks and at the end of the workday.

Environmental exposure controls

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

9.1 Information on basic physical and chemical properties

Appearance: Colourless, liquid	**Odour:** strong	**Odour threshold:** no data available	**pH:** no data available
Melting point: −107°C	**Boiling point & range:** 98-99°C	**Flash point:** -12°C – closed cup	**Evaporation rate:** no data available
Flammability: Highly flammable	**Upper/lower flammability or explosive limits:** Upper limit: 6%(V) Lower limit: 1%(V)	**Vapour pressure:** 55 hPa at 21°C 117 hPa at 37.8°C	**Relative vapour density:** 3.94 (Air = 1.0)
Density of liquid: ≈ 692 kgm^{-3} at 25°C	**Solubility:** insoluble	**Partition coefficient: n-octanol/water** log Pow: 4.6	**Auto-ignition temperature:** no data available
Decomposition temperature: no data available	**Viscosity:** no data available	**Explosive properties:** no data available	**Oxidising properties:** no data available

9.2 Other information

Miscibility with water: immiscible with water

Section 10 Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to avoid	Heat, flames and sparks. Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Strong oxidising agents.
10.6 Hazardous decomposition products	Hazardous decomposition products formed under fire conditions – carbon oxides.

Section 11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation:	LC50 Inhalation - Rat - 4h - >33.52 mg/l (OECD Test Guideline 403)
Ingestion:	LD50 Oral - Rat - > 5000 mg/kg (OECD Test Guideline 401)
Skin corrosion/irritation:	LD50 Dermal - Rabbit - > 2000 mg/kg (OECD Test Guideline 402) Skin Rabbit. Result: Irritating to to skin (OECD Test Guideline 404)
Serious eye damage/irritation:	Eyes - Rabbit. Result: No irritation (OECD Test Guideline 405)
Germ cell mutagenicity:	Rat - Unscheduled DNA synthesis
Carcinogenicity:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity:	No data available.
Specific target organ toxicity – single exposure:	May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure:	No data available.
Aspiration hazard:	This substance is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.
Additional information:	RTECS: SA3320000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Liver - Irregularities - Based on human evidence.

Section 12 Ecological information

2,2,4 Trimethylpentane is unlikely to present any ecological risk in the quantity supplied in a 10 ml ampoule.

12.1 Toxicity	No data available
12.2 Persistence and degradability	No data available
12.3 Bioaccumulative potential	No data available
12.4 Mobility in soil	No data available
12.5 Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects	Very toxic to aquatic life with long lasting effects.

Section 13 Disposal considerations

General requirements:	Observe all national and local environmental regulations.
Contaminated packaging:	Dispose of as unused product.

Section 14 Transport information

UN Number	**UN proper shipping name**	**Transport hazard class(es)**
1262	octanes	3
Environmental hazards	**EMS-No:**	**Packing group**
not classified	F-E, S-E	packing group II

Section 15 Regulatory information

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

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010.

15.2 Chemical safety assessment

No chemical assessment has been carried out for this substance by the supplier.

Section 16 Other information

Text of H-code(s) mentioned in Section 2 & 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.

Reason for revision: Updated to comply with European Regulation (EC) No 453/2010.

Disclaimer

H&D Fitzgerald Ltd believes that data given here is accurate. It is derived from published information about 2,2,4 Trimethylpentane. No warranty, expressed or implied, is intended. The data is provided for your information and consideration when using 2,2,4 Trimethylpentane as a liquid density standard for the calibration of density meters. H&D Fitzgerald Ltd assumes no legal responsibility for its use.