

SAFETY DATA SHEET

2,2,4-Trimethylpentane (ISOOCTANE)

This MSDS is valid for all grades that start with catalog number
398

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: Isooctane; Isobutyltrimethylmethane
Other means of identification: CAS No. 540-84-1
EINECS No. 208-759-1

Recommended use of the chemical and restrictions on use:

Commonly used to produce gasoline

Supplier Details:

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

Emergency Contact:

CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)



2. HAZARDS IDENTIFICATION

OSHA Hazards:

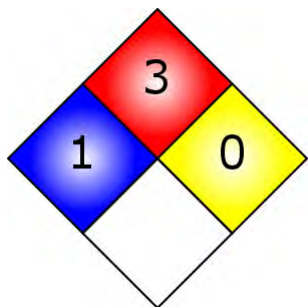
Flammable liquid, Target Organ Effect, Irritant, Harmful by ingestion, Irritant

Target Organs:

Kidney, Liver

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NFPA



GHS label elements, including precautionary statements



Signal Word:

DANGER!

Hazard statement(s)

H225	Highly flammable liquid and vapor.
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.

Precautionary statement(s)

P501	Dispose of contents and container to an approved waste disposal plant.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor/physician.
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P405	Store locked up.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.

GHS Classification(s)

Acute aquatic toxicity (Category 1)
Aspiration hazard (Category 1)

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Chronic aquatic toxicity (Category 1)
Flammable Liquids (Category 2)
Skin irritation (Category 2)
Specific target organ toxicity - single exposure (Category 3)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Can cause eye irritation.
Ingestion	Can be harmful if swallowed.
Inhalation	Can be harmful if inhaled. Can cause respiratory tract irritation. Vapors may cause drowsiness and dizziness.
Skin	Can be harmful if absorbed through skin. Can causes skin irritation.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity: 2,2,4-Trimethylpentane
Common name / Synonym: Isooctane; Isobutyltrimethylmethane
CAS number: 540-84-1
EINECS number: 208-759-1
ICSC number: 0496
RTECS #: SA3320000
UN #: 1262
EC #: 601-009-00-8

% Weight	Material	CAS
100	ISOCTANE (2,2,4-TRIMETHYLPENTANE)	540-81-1

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. Contact a doctor. If irritation persists, get medical attention.

Inhalation

Remove person to fresh air. Seek medical attention. Give oxygen or artificial respiration as needed.

Eyes

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Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

SMALL FIRE: Use dry chemicals, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. Cool all affected containers with flooding quantities of water.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Flash backs are possible with the use of this product and may cover a considerable distance. At risk, under fire conditions, of container explosion.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Unusual Fire and Explosion Hazards:

- Extremely flammable

EXTREMELY FLAMMABLE. EVACUATE A RADIUS OF 1500 FEET FOR UNCONTROLLABLE FIRES. CONSIDER EVACUATION DOWNWIND IF MATERIAL IS LEAKING.

Flammable Properties

Flash point

-12°C (10°F) - closed cup

Autoignition temperature

415°C (779°F)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

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Highly flammable liquid. Eliminate all sources of ignition. All equipment used when handling this product must be grounded. A vapor suppressing foam may be used to reduce vapors. Do not touch or walk through spilled material. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations. Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

Conditions for safe storage, including any incompatibilities:

Store in a closed container in a cool, dry, well-ventilated area. Keep containers upright and tightly closed to prevent leaks/spills.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
2,2,4-Trimethylpentane	/		No exposure limit	

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

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).

Hand 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.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by

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appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear colorless liquid
Odor	Gasoline-like
Odor threshold	not available
pH	not available
Freezing point	-107 °C (-161 °F)
Initial boiling point and boiling range	99 °C (211 °F)
Flash point	-12 °C (10 °F) - closed cup
Evaporation rate	not available
Flammability (solid, gas)	not available
Upper / Lower flammability or explosive limits	6 %(V) / 1 %(V)
Vapor pressure	55 hPa (41 mmHg) at 21 °C (70 °F) 117 hPa (88 mmHg) at 37.80 °C (100.04 °F)
Vapor Density	3.9 (AIR=1)
Relative Density	not available
Solubility(ies)	Negligible
Partition coefficient n-octanol/water(ies)	log Pow: 4.6
Auto-ignition temperature	415°C (779°F)
Decomposition temperature	not available
Formula (2,2,4-TRYMETHYLPENTANE)	C8H18
Molecular Formula (2,2,4-TRIMETHYLPENTANE)	114.23 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapors may form explosive mixture with air.
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames, and sparks. Extreme temperatures and direct sunlight.
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

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11. TOXICOLOGICAL INFORMATION

• 2,2,4-Trimethylpentane 540-84-1

Product Summary:

No data available for the teratogenic, or reproductive toxicity effects of this product. Product is not considered to cause respiratory or skin sensitization, or specific target organ toxicity - repeat exposure

Acute Toxicity:

No Data Available	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Irritation:

Eyes

No data available.

Skin

No data available

Aspiration Hazard

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard

Germ cell mutagenicity

Genotoxicity in vivo - Rat - Oral - Unscheduled DNA synthesis.

Specific target organ toxicity - single exposure (Globally Harmonized System)

May cause drowsiness or dizziness.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Causes eye irritation.
Ingestion	Can be harmful if swallowed.

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Inhalation	Can be harmful if inhaled. Can cause respiratory tract irritation. Vapors can cause drowsiness and dizziness.
Skin	Harmful if absorbed through skin. Can cause skin irritation.

12. ECOLOGICAL INFORMATION

- 2,2,4-Trimethylpentane 540-84-1

Ecotoxicity (aquatic and terrestrial, where available):

Ecotoxicity

No data available

Persistence and degradability:

No data available

Bioaccumulative potential:

No data available

Other adverse effects:

An environmental hazard is possible if product is handled or disposed of improperly. Product is highly toxic to aquatic life with long term effects.

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

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. Contact a licensed professional waste disposal service to dispose of this material.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1262
UN proper shipping name	Octanes
Transport hazard class(es)	3
Packing group (if applicable)	II

Reportable Quantity

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1,000 lbs.

IMDG

UN-Number: 1262 Class: 3 Packing Group: II

EMS-No: F-E, S-E

Proper shipping name: OCTANES

Marine pollutant: No

IATA

UN-Number: 1262 Class: 3 Packing Group: II

Proper shipping name: Octanes

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

Flammable liquid, Target Organ Effect, Irritant, Harmful by ingestion, Irritant

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Chronic Health Hazard

Fire Hazard

CERCLA

2,2,4-Trimethylpentane CAS-No. 540-84-1 RQ: 1,000 lbs

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Massachusetts Right To Know Components

2,2,4-Trimethylpentane CAS-No. 540-84-1 Revision Date 2007-03-01

Pennsylvania Right To Know Components

2,2,4-Trimethylpentane CAS-No. 540-84-1 Revision Date 2007-03-01

New Jersey Right To Know Components

2,2,4-Trimethylpentane CAS-No. 540-84-1 Revision Date 2007-03-01

California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION: INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Disclaimer

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