

## Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/26/2025

Reviewed on 03/26/2025

### 1 Identification

- **Product identifier**
- **Trade name:** Isooctane
- **CAS Number:**  
540-84-1
- **Other means of identification**
- **Article number:** CH0027
  
- **EC number:**  
208-759-1
- **Index number:**  
601-009-00-8
- **Application of the substance / the mixture** Chemicals products for laboratory
  
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
CARLO ERBA REAGENTS  
Chaussée du Vexin  
Parc d'Affaires des Portes - BP616  
27106 VAL DE REUIL Cedex  
Téléphone: +33 (0)2 32 09 20 00  
Télécopie: +33 (0)2 32 09 20 20
- **Information department:**  
Q.A / Normative  
email: MSDS\_CER-SDS@cer.dgroup.it
- **Emergency telephone number:**  
US 911  
CHEMTREC 1-800-424-9300 (Staffed 24/7)  
American Association of Poison Control Centers 1-800-222-1222 (Staffed 24/7)

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable liquids 2

Highly flammable liquid and vapor.



GHS08 Health hazard

Aspiration hazard 1

May be fatal if swallowed and enters airways.



GHS07

Skin irritation 2

Causes skin irritation.

Specific target organ toxicity (single exposure) 3

May cause drowsiness or dizziness.

- **Label elements**
- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**



· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapor.*  
*Causes skin irritation.*  
*May cause drowsiness or dizziness.*  
*May be fatal if swallowed and enters airways.*

· **Precautionary statements**

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*  
*Use explosion-proof [electrical/ventilating/lighting] equipment.*  
*Wear protective gloves / eye protection / face protection.*  
*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*  
*If inhaled: Remove person to fresh air and keep comfortable for breathing.*  
*Store in a well-ventilated place. Keep container tightly closed.*

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:**

· **NFPA ratings (scale 0-4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Classification according to (d)(1)(ii) of § 1910.1200**

*The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.*

· **Hazards not otherwise classified**

*There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.*

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

CAS: 540-84-1 Isooctane

· **Identification number(s)**

· **EC number:** 208-759-1

· **Index number:** 601-009-00-8

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### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
Seek immediate medical advice.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
Call a doctor immediately.
- **Information for doctor:** Show the doctor this Material Safety Data Sheet.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Alcohol resistant foam
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.  
Carbon monoxide (CO)  
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Keep away from ignition sources  
Wear protective equipment. Keep unprotected persons away.  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.  
Ensure adequate ventilation
- **Environmental precautions:**  
Do not allow to penetrate the ground/soil.  
Do not allow product to reach sewage system or any water course.  
Prevent seepage into sewage system, workpits and cellars.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Dispose contaminated material as waste according to section 13.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 230 ppm
- **PAC-2:** 830 ppm
- **PAC-3:** 5000\* ppm

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- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Precautions for safe handling**  
Store in cool, dry place in tightly closed receptacles.  
Ensure good ventilation/exhaustion at the workplace.  
Only handle and refill product in closed systems.  
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.  
Pneumatic conveyance only with nitrogen.
- **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Use only receptacles specifically permitted for this substance/product.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**CAS: 540-84-1 Isooctane**

**TLV** Long-term value: 1401 mg/m<sup>3</sup>, 300 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Use suitable respiratory protective device only when aerosol or mist is formed.

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In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Rubber gloves

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Rubber gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

The penetration time has to be at least 480 minutes

Fluorocarbon rubber (Viton)

Recommended thickness of the material:  $\geq 0.4$  mm

· **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.26$  mm

· **Eye protection:**



Tightly sealed goggles

· **Limitation and supervision of exposure into the environment**

In case of unintended release of the product: See section 6 of the Safety Data Sheet.

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· <b>General Information</b>	114.23 g
· <b>Physical state</b>	Liquid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Nearly odorless
· <b>Odor threshold:</b>	Not determined.
· <b>Melting point/Melting range:</b>	-107 °C (-160.6 °F)
· <b>Boiling point/Boiling range:</b>	99 °C (210.2 °F)
· <b>Flammability:</b>	Highly flammable.
· <b>Explosion limits:</b>	
· <b>Lower:</b>	1.1 Vol %
· <b>Upper:</b>	6 Vol %
· <b>Flash point:</b>	-12 °C (10.4 °F)
· <b>Auto igniting:</b>	410 °C (770 °F)
· <b>Decomposition temperature:</b>	Not determined.

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· <b>pH-value:</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
· <b>Kinematic:</b>	<i>Not determined.</i>
· <b>Dynamic at 20 °C (68 °F):</b>	<i>0.51 mPas</i>
· <b>Solubility in / Miscibility with</b>	
· <b>Water:</b>	<i>Not miscible or difficult to mix.</i>
· <b>organic solvents:</b>	<i>Soluble in many organic solvents.</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Vapor pressure at 20 °C (68 °F):</b>	<i>15 hPa (11.3 mm Hg)</i>
· <b>Vapor pressure:</b>	
· <b>Density at 20 °C (68 °F):</b>	<i>0.69 g/cm<sup>3</sup> (5.75805 lbs/gal)</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Particle characteristics</b>	<i>Not applicable.</i>
· <b>Other information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	<i>Fluid</i>
· <b>Important information on protection of health and environment, and on safety.</b>	
· <b>Ignition temperature:</b>	<i>Not determined.</i>
· <b>Danger of explosion:</b>	<i>Product is not explosive. However, formation of explosive air/vapor mixtures are possible.</i>
· <b>Molecular formula</b>	<i>C8 H18</i>
· <b>Change in condition</b>	
· <b>Evaporation rate</b>	<i>Not determined.</i>

### 10 Stability and reactivity

- **Reactivity** See 10.3
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
*No decomposition if used and stored according to specifications.*
- **Possibility of hazardous reactions**  
*Can react violently with oxygen rich (oxidizing) material. Danger of Explosion.*
- **Conditions to avoid**  
*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*
- **Incompatible materials:** *No further relevant information available.*
- **Hazardous decomposition products:** *Carbon monoxide*

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** *Based on available data, the classification criteria are not met.*
- **Primary irritant effect:**
- **on the skin:** *Irritant to skin and mucous membranes.*
- **on the eye:** *Irritating effect.*
- **Sensitization:** *No sensitizing effects known.*
- **Other information (about experimental toxicology):** *No further relevant information available.*
- **Additional toxicological information:**  
*Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.*

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- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
- **Alternative sources for toxicological information**  
No non-standard sources for toxicological information where used.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Other information:** The product is not easily biodegradable.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (Assessment by list): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.  
Very toxic for aquatic organisms

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Contact waste processors for recycling information.
- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

### 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>                                | <p>UN1262</p>                                |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, IATA</b></li> <li>· <b>IMDG</b></li> </ul> | <p>Octanes<br/>OCTANES, MARINE POLLUTANT</p> |

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· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids  
 · **Label** 3

· **IMDG**



· **Class** 3 Flammable liquids  
 · **Label** 3

· **IATA**



· **Class** 3 Flammable liquids  
 · **Label** 3

· **Packing group**

· **DOT, IMDG, IATA** II

· **Environmental hazards:** Environmentally hazardous substance, liquid; Marine Pollutant

· **Marine pollutant:** Yes (P)  
 Symbol (fish and tree)

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**  
 · **Quantity limitations** On passenger aircraft/rail: 5 L  
 On cargo aircraft only: 60 L  
 · **Hazardous substance:** 1000 lbs, 454 kg  
 · **Remarks:** Special marking with the symbol (fish and tree).

· **IMDG**

· **Limited quantities (LQ)** 1L  
 · **Excepted quantities (EQ)** Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

· **Special precautions for user** Warning: Flammable liquids

· **Hazard identification number (Kemler code):** 33

· **EMS Number:** F-E,S-E

· **Stowage Category** B

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· **UN "Model Regulation":** UN 1262 OCTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA Section 355 (extremely hazardous substances)** Substance is not listed.
- **SARA Section 313 (specific toxic chemical listings)** Substance is not listed.
- **TSCA (Toxic Substances Control Act) ACTIVE**
- **Hazardous Air Pollutants** Substance is listed.
- **Prop 65 - Chemicals known to cause cancer** Substance is not listed.
- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency) II**
- **TLV (Threshold Limit Value)** Substance is not listed.
- **MAK (German Maximum Workplace Concentration)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
NK	50-100

- **Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS:** Q.A / Normative
- **Date of previous version** 03/19/2021
- **Version number of previous version:** 27
- **Date of preparation** 03/26/2025

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

DNEL

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

P: Marine Pollutant

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

IMO: International Maritime Organization

Flammable liquids 2: Flammable liquids – Category 2

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*Skin irritation 2: Skin corrosion/irritation – Category 2*

*Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3*

*Aspiration hazard 1: Aspiration hazard – Category 1*

· **Sources**

*Globally Harmonized System, GHS*

*ADR/RID, IMDG, IATA*

*PubChem : an open chemistry database at the National Institutes of Health (NIH)*

*ECHA : European CHEmicals Agency*

· \* **Data compared to the previous version altered. .**

US