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SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 07/26/2006
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Version 1.80

Section 1 - Product and Company Information

Product Name Octane, reagent grade, 98%
Product Number 412236
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052

Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
N-OCTANE	111-65-9	No	203-892-1	601-009-00-8

Formula C₈H₁₈
Synonyms n-Octane, Octane (ACGIH:OSHA), Oktan (Polish), Oktanen (Dutch), Ottani (Italian)

Section 3 - Hazards Identification

Emergency Overview
Flammable (USA) Highly Flammable (EU). Irritant.
Highly flammable. Irritating to eyes, respiratory system and skin.
Target organ(s): Central nervous system.

HMIS Rating
Health: 2* Flammability: 3 Reactivity: 0

NFPA Rating
Health: 2 Flammability: 3 Reactivity: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards

Forms explosive mixtures in air.
Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.

Flash Point: 55.4 °F 13 °C

Explosion Limits: Lower: 0.96 % Upper: 6.5 %

Autoignition Temp: 220 °C **Flammability:** Yes

Extinguishing Media

Suitable

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.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting

Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage**Suitable**

Keep container closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Special Requirements

Hygroscopic.

Section 8 - Exposure Controls / PPE**Engineering Controls**

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

Personal Protective Equipment**Respiratory**

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

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits

Country	Type	Value
Poland	NDS	1000 MG/M3
Poland	NDSCh	1800 MG/M3
Poland	NDSP	

Exposure Limits, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	300 PPM
USA	MSHA Standard-air	TWA	400 PPM (1900 MG/M3)
USA	OSHA.	PEL	8H TWA 500 PPM (2350 MG/M3)
New Zealand	OEL		
USA	Remarks: check ACGIH TLV		
USA	NIOSH	TWACeiling concentration	75 PPM 385 PPM/15M

Section 9 - Physical/Chemical Properties**Appearance**

Physical State	Color
Liquid	Colorless

Molecular Weight: 114.23 AMU

pH	N/A
BP/BP Range	125 - 126 °C
MP/MP Range	-57 °C
Freezing Point	N/A
Vapor Pressure	11 mmHg 20 °C
Vapor Density	3.9 g/l
Saturated Vapor Conc.	N/A
SG/Density	0.703 g/cm3

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Page 3

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Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	55.4 °F
Flash Point °C	13 °C
Explosion Limits	Lower: 0.96 % Upper: 6.5 %
Flammability	N/A
Autoignition Temp	220 °C
Refractive Index	1.397
Solubility	N/A

Method: closed cup

Method: closed cup

N/A = not available

Section 10 - Stability and Reactivity**Stability****Stable**

Stable.

Conditions to Avoid

Moisture.

Materials to Avoid

Strong acids, Strong oxidizing agents.

Hazardous Decomposition Products**Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide.

Hazardous Polymerization**Hazardous Polymerization**

Will not occur.

Section 11 - Toxicological Information**Route of Exposure****Skin Contact**

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

May cause eye irritation.

Inhalation

May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion

May be harmful if swallowed.

Target Organ(s) or System(s)

Central nervous system.

Signs and Symptoms of Exposure

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Can cause CNS depression. Narcotic effect.

RTECS Number: RG8400000

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Page 4

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Toxicity Data

Inhalation - Rat: 118,000 mg/m3 (LC50)

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations**Appropriate Method of Disposal of Substance or Preparation**

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

Section 14 - Transport Information**DOT**

Proper Shipping Name: Octanes
UN#: 1262
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Octanes
IATA UN Number: 1262
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information**EU Directives Classification**

Symbol of Danger: F Xn N

Indication of Danger

Highly Flammable. Harmful. Dangerous for the environment.

Risk Statements R: 11 38 50/53 65 67

Highly flammable. Irritating to skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.

Safety Statements S: 9 16 29 33 60 61 62

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Do not empty into drains. Take precautionary measures against static discharges. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

US Classification and Label Text**Indication of Danger**

Flammable (USA) Highly Flammable (EU). Irritant.

Risk Statements

Highly flammable. Irritating to eyes, respiratory system and skin.

Safety Statements

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take precautionary measures against static discharges. Wear suitable protective clothing.

US Statements

Target organ(s): Central nervous system.

United States Regulatory Information

SARA Listed: No

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Page 5

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TSCA Inventory Item: Yes

Canada Regulatory Information**WHMIS Classification**

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information**Disclaimer**

For R&D use only. Not for drug, household or other uses.

Warranty

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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Page 6

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