SIGMA-ALDRICH

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Caffeine
Product Number: C8960
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 778-8555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 1,3,7-Trimethyloctanthine
Formula: C_{9}H_{15}N_{4}O_{2}
Molecular Weight: 194.19 g/mol
CAS-No.: 58-08-2
EC-No.: 200-362-1
Index-No.: 613-086-00-5
Concentration: -

3. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Target Organ Effect, Toxic by Ingestion, Irritant
Target Organs
Central nervous system, Heart

HMIS Classification
Health Hazard: 2
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
Flash point: no data available
Ignition temperature: 540 °C (1,004 °F)
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.
Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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
Form: solid
Colour: white

Safety data
pH: 5.3 - 6.5 at 10 g/l at 20 °C (68 °F)
Melting point: 254 - 256.5 °C (483 - 487.7 °F)
Boiling point: nc data available
Flash point: nc data available
Ignition temperature: 540 °C (1,004 °F)
Lower explosion limit: nc data available
Upper explosion limit: nc data available
Vapour pressure: 20 hPa (15 mmHg) at 89 °C (192 °F)
Density: 1.230 g/cm3
Water solubility: slightly soluble
Partition coefficient: log Pow: -0.07

n-octanol/water

10. STABILITY AND REACTIVITY*

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agents

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat: 192 mg/kg
Inhalation: Irritating to respiratory system.
Irritation and corrosion
no data available
Sensitisation
no data available

Chronic exposure
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 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.

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.

Genotoxicity in vitro - rat - Kidney
Micronucleus test

Genotoxicity in vivo - mouse - Oral
Micronucleus test

Laboratory experiments have shown mutagenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Toxic if swallowed.

Target Organs: Central nervous system, Heart,

Additional Information
RTECS: EV6475000

12. ECOLOGICAL INFORMATION

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Elimination Information (persistence and degradability)
no data available

Ecotoxicity effects
- Toxicity to fish: LC50 - Leuciscus idus (Golden orfe) - 87 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 182 mg/l - 48 h

Further information on ecology
no data available

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 1544 Class: 6.1 Packing group: II
Proper shipping name: Alkaloid salts, solid, n.o.s. (Caffeine)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 1544 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: ALKALOID SALTS, SOLID, N.O.S. (Caffeine)
Marine pollutant: No

IATA
UN-Number: 1544 Class: 6.1 Packing group: II
Proper shipping name: Alkaloid salts, solid n.o.s. (Caffeine)

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Toxic by ingestion, Irritant

DSL Status
All components of this product are on the Canadian DSL list.

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

SARA 313 Components
SARA 313: 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

Massachusetts Right To Know Components
No Components Listed

Pennsylvania Right To Know Components
Caffeine
CAS-No. 58-08-2

New Jersey Right To Know Components
Caffeine
CAS-No. 58-08-2

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further Information
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