

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Caffeine

Product Number : C0750  
Brand : Sigma-Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +18003255832  
Fax : +18003255052  
Emergency Phone # : (314) 776-6555

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Target Organ Effect, Toxic by ingestion, Irritant

##### Target Organs

Central nervous system, Heart

##### GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H301 : Toxic if swallowed.  
H402 : Harmful to aquatic life.

Precautionary statement(s)

P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.  
P273 : Avoid release to the environment.  
P301 + P310 : IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P321 : Specific treatment (see supplemental first aid instructions on this label).  
P330 : Rinse mouth.  
P405 : Store locked up.  
P501 : Dispose of contents/container to an approved waste disposal plant.

#### 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

**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.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1,3,7-Trimethylxanthine

Formula :  $C_8H_{10}N_4O_2$

Molecular Weight : 194.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Caffeine</b>			
58-08-2	200-362-1	613-086-00-5	-

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### 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.

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### 5. FIRE-FIGHTING MEASURES

#### 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.

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### 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 and materials for containment and cleaning up

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

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### 7. HANDLING AND STORAGE

#### Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

#### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry 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

Face shield and 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	powder
Colour	white

### Safety data

pH	5.5 - 6.5 at 10 g/l at 20 °C (68 °F)
Melting point	234 - 236.5 °C (453 - 457.7 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	540 °C (1,004 °F) -
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	20 hPa (15 mmHg) at 89 °C (192 °F)
Density	1.230 g/cm <sup>3</sup>
Water solubility	slightly soluble
Partition coefficient: n-octanol/water	log Pow: -0.07

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

no data available

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

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## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

LD50 Oral - rat - 192 mg/kg

Remarks: Brain and Coverings:Other degenerative changes. Kidney, Ureter, Bladder:Interstitial nephritis.

Inhalation: Irritating to respiratory system.

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

Laboratory experiments have shown mutagenic effects.

Genotoxicity in vitro - rat - Kidney

Micronucleus test

Genotoxicity in vivo - mouse - Oral

Micronucleus test

**Carcinogenicity**

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: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Caffeine)

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.

**Reproductive toxicity**

no data available

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

**Specific target organ toxicity - single exposure (GHS)**

no data available

**Specific target organ toxicity - repeated exposure (GHS)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Toxic if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

**Signs and Symptoms of Exposure**

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

**Additional Information**

RTECS: EV6475000

## 12. ECOLOGICAL INFORMATION

### Toxicity

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

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### PBT and vPvB assessment

no data available

### Other adverse effects

no data available

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## 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.

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## 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)

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## 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

Revision Date

**New Jersey Right To Know Components**

Caffeine

CAS-No.  
58-08-2

Revision Date

**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.

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**16. OTHER INFORMATION**

**Further information**

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