

# Material Safety Data Sheet

## Caffeine

ACC# 03830

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Caffeine

**Catalog Numbers:** O1728-500

**Synonyms:** 3,7-Dihydro-1,3,7-Trimethyl-1H-Purine-2,6-Dione; Xanthrine,1,3,7-Trimethyl; Anhydrous Caffeine; Methyl Theobromide

**Company Identification:**

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

**For information, call:** 201-796-7100

**Emergency Number:** 201-796-7100

**For CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
58-08-2	CAFFEINE	100	200-362-1

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: white solid.

**Warning!** Harmful if swallowed. May cause eye, skin, and respiratory tract irritation. May cause digestive tract irritation with nausea, vomiting, and diarrhea. May cause cardiac disturbances. May cause central nervous system effects.

**Target Organs:** Heart, central nervous system.

#### Potential Health Effects

**Eye:** Dust may cause mechanical irritation.

**Skin:** May cause skin irritation.

**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion increases the metabolic rate causing warm, flushed

and moist skin, muscular weakness, rapid heart rate, insomnia, nervousness, increased metabolism and weight loss. May cause ataxia, blood pressure elevation, convulsions, hallucinations, hypermotility, muscle contraction or spasticity, somnolence (general depressed activity), toxic psychosis, and tremors.

**Inhalation:** May cause respiratory tract irritation. May cause effects similar to those described for ingestion.

**Chronic:** May cause digestive tract and cardiac disturbances. May cause reproductive and fetal effects.

## Section 4 - First Aid Measures

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:** In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use agent most appropriate to extinguish fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** 540 deg C ( 1,004.00 deg F)

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in

Section 8.

**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Provide ventilation. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Do not ingest or inhale. Wash clothing before reuse.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
CAFFEINE	none listed	none listed	none listed

**OSHA Vacated PELs:** CAFFEINE: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** white

**Odor:** odorless  
**pH:** Not available.  
**Vapor Pressure:** Negligible.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Negligible.  
**Viscosity:** Not available.  
**Boiling Point:** 177.8 deg C  
**Freezing/Melting Point:** 237.8 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Slightly soluble in water.  
**Specific Gravity/Density:** 1.23  
**Molecular Formula:** C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>  
**Molecular Weight:** 194.0956

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.  
**Conditions to Avoid:** Incompatible materials, dust generation, excess heat.  
**Incompatibilities with Other Materials:** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.  
**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**  
**CAS#** 58-08-2: EV6475000  
**LD50/LC50:**  
**CAS#** 58-08-2:  
Oral, mouse: LD50 = 127 mg/kg;  
Oral, rabbit: LD50 = 224 mg/kg;  
Oral, rat: LD50 = 192 mg/kg;

**Carcinogenicity:**  
**CAS#** 58-08-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** Experimental reproductive effects have been reported.  
**Teratogenicity:** A human teratogen, causes developmental abnormalities of the craniofacial and musculoskeletal systems, pregnancy termination and stillbirth.  
**Reproductive Effects:** See above.  
**Mutagenicity:** No information available.  
**Neurotoxicity:** No information available.  
**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** TERRESTRIAL FATE: If released to soil, estimated soil adsorption indicate that caffeine will display very high mobility. An estimated Henry's Law constant of  $1.9 \times 10^{-19}$  atm-cu m/mole at 25 deg C indicates that it will not volatilize from moist soil to the atmosphere. AQUATIC FATE: If released to water caffeine will not bioconcentrate aquatic organisms. ATMOSPHERIC FATE: Exists predominantly in the particulate phase, half life 2.5 hours. Expected to biodegrade but not bioconcentrate.

**Physical:** No information available.

**Other:** No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	ALKALOIDS, SOLID, N.O.S.	ALKALOIDS, SOLID, N.O.S.
<b>Hazard Class:</b>	6.1	6.1
<b>UN Number:</b>	UN1544	UN1544
<b>Packing Group:</b>	III	III

## Section 15 - Regulatory Information

**US FEDERAL**

**TSCA**

CAS# 58-08-2 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPO.

**SARA Codes**

CAS # 58-08-2: immediate.

**Section 313** No chemicals are reportable under Section 313.

**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 58-08-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations****European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN

**Risk Phrases:**

R 22 Harmful if swallowed.

**Safety Phrases:****WGK (Water Danger/Protection)**

CAS# 58-08-2: 1

**Canada - DSL/NDSL**

CAS# 58-08-2 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of D1B, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

**Section 16 - Additional Information**

**MSDS Creation Date:** 2/16/1999

**Revision #7 Date:** 2/13/2008

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*