

## SAFETY DATA SHEET

Creation Date 15-July-2014

Revision Date 17-January-2018

Revision Number 4

### 1. Identification

**Product Name** Caffeine (USP/FCC)

**Cat No. :** O1728-500

**CAS-No** 58-08-2  
**Synonyms** 3,7-Dihydro-1,3,7-trimethyl-1H-purine-2,6-dione; Anhydrous C; Xanthrine, 1,3,7-Trimethyl

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

**Importer/Distributor**  
Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Manufacturer**

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

**Acute oral toxicity** Category 3

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Toxic if swallowed



##### **Precautionary Statements**

**Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product

**Response**

IF SWALLOWED: Immediately call a POISON CENTER/doctor

Rinse mouth

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

### 3. Composition/Information on Ingredients

| Component | CAS-No  | Weight % |
|-----------|---------|----------|
| Caffeine  | 58-08-2 | 100      |

### 4. First-aid measures

|   |  |
|---|--|
| <b>Eye Contact</b>  | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.  |
| <b>Skin Contact</b>   | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.  |
| <b>Inhalation</b>   | Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Obtain medical attention. |
| <b>Ingestion</b>  | Do not induce vomiting. Obtain medical attention.  |
| <b>Most important symptoms/effects<br/>Notes to Physician</b> | No information available.<br>Treat symptomatically   |

### 5. Fire-fighting measures

|   |  |
|---|--|
| <b>Suitable Extinguishing Media</b>     | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| <b>Unsuitable Extinguishing Media</b>   | No information available   |
| <b>Flash Point</b>                      | Not applicable   |
| <b>Method -</b>                         | No information available   |
| <b>Autoignition Temperature</b>         | 540 °C / 1004 °F   |
| <b>Explosion Limits</b>                 |  |
| <b>Upper</b>                            | No data available  |
| <b>Lower</b>                            | No data available  |
| <b>Sensitivity to Mechanical Impact</b> | No information available   |
| <b>Sensitivity to Static Discharge</b>  | No information available   |

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>) Nitrogen oxides (NO<sub>x</sub>)

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

|                    |                          |                         |                                |
|--------------------|--------------------------|-------------------------|--------------------------------|
| <b>Health</b><br>2 | <b>Flammability</b><br>0 | <b>Instability</b><br>0 | <b>Physical hazards</b><br>N/A |
|--------------------|--------------------------|-------------------------|--------------------------------|

**6. Accidental release measures**

|   |   |
|---|---|
| <b>Personal Precautions</b>                 | Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. |
| <b>Environmental Precautions</b>            | Avoid release to the environment. See Section 12 for additional ecological information.   |
| <b>Methods for Containment and Clean Up</b> | Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.                              |

**7. Handling and storage**

|                 |  |
|-----------------|--|
| <b>Handling</b> | Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. |
| <b>Storage</b>  | Keep containers tightly closed in a dry, cool and well-ventilated place.   |

**8. Exposure controls / personal protection**

|                            |   |
|----------------------------|---|
| <b>Exposure Guidelines</b> | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
|----------------------------|---|

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment**

|                        |   |
|------------------------|---|
| <b>Eye Protection</b>  | 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. |
| <b>Hand Protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.   |

| Glove material | Breakthrough time                 | Glove thickness | Glove comments         |
|----------------|-----------------------------------|-----------------|------------------------|
| Nitrile rubber | See manufacturers recommendations | -               | Splash protection only |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

No information available.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

## 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Physical State</b>                         | Solid  |
| <b>Appearance</b>                             | White  |
| <b>Odor</b>                                   | Odorless   |
| <b>Odor Threshold</b>                         | No information available                                     |
| <b>pH</b>                                     | No information available                                     |
| <b>Melting Point/Range</b>                    | 237.8 °C / 460 °F  |
| <b>Boiling Point/Range</b>                    | 177.8 °C / 352 °F  |
| <b>Flash Point</b>                            | Not applicable   |
| <b>Evaporation Rate</b>                       | negligible   |
| <b>Flammability (solid,gas)</b>               | No information available                                     |
| <b>Flammability or explosive limits</b>       |  |
| <b>Upper</b>                                  | No data available  |
| <b>Lower</b>                                  | No data available  |
| <b>Vapor Pressure</b>                         | negligible   |
| <b>Vapor Density</b>                          | No information available                                     |
| <b>Specific Gravity</b>                       | 1.23   |
| <b>Solubility</b>                             | Slightly soluble in water                                    |
| <b>Partition coefficient; n-octanol/water</b> | No data available  |
| <b>Autoignition Temperature</b>               | 540 °C / 1004 °F   |
| <b>Decomposition Temperature</b>              | No information available                                     |
| <b>Viscosity</b>                              | No information available                                     |
| <b>Molecular Formula</b>                      | C <sub>8</sub> H <sub>10</sub> N <sub>4</sub> O <sub>2</sub> |
| <b>Molecular Weight</b>                       | 194.0956   |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactive Hazard</b>                  | None known, based on information available  |
| <b>Stability</b>                        | Stable under normal conditions.   |
| <b>Conditions to Avoid</b>              | Avoid dust formation. Incompatible products. Excess heat.                                   |
| <b>Incompatible Materials</b>           | Strong oxidizing agents   |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> ) |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.  |
| <b>Hazardous Reactions</b>              | None under normal processing.   |

## 11. Toxicological information

**Acute Toxicity****Component Information**

| Component | LD50 Oral                | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------------|-------------|-----------------|
| Caffeine  | LD50 = 192 mg/kg ( Rat ) | Not listed  | Not listed      |

**Toxicologically Synergistic** No information available

**Products**

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------|---------|------------|------------|------------|------------|------------|
| Caffeine  | 58-08-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish  | Microtox   | Water Flea                                |
|-----------|------------------|--|------------|---|
| Caffeine  | Not listed       | LC50: = 151 mg/L, 96h flow-through (Pimephales promelas) | Not listed | EC50: = 182.12 mg/L, 4h (Daphnia species) |

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available.

**Mobility** .

| Component | log Pow |
|-----------|---------|
| Caffeine  | -0.07   |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

**UN-No** UN1544  
**Proper Shipping Name** ALKALOIDS, SOLID, N.O.S.  
**Proper technical name** (CAFFEINE)  
**Hazard Class** 6.1  
**Packing Group** III

**TDG**

UN-No UN1544  
 Proper Shipping Name ALKALOIDS, SOLID, N.O.S.  
 Hazard Class 6.1  
 Packing Group III

**IATA**

UN-No UN1544  
 Proper Shipping Name ALKALOIDS, SOLID, N.O.S.  
 Hazard Class 6.1  
 Packing Group III

**IMDG/IMO**

UN-No UN1544  
 Proper Shipping Name ALKALOIDS, SOLID, N.O.S.  
 Hazard Class 6.1  
 Packing Group III

## 15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia X = listed China Canada Europe TSCA Korea Philippines Japan

**International Inventories**

| Component | DSL | NDSL | TSCA | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|-----------|-----|------|------|-----------|--------|-----|-------|------|------|-------|------|
| Caffeine  | X   | -    | X    | 200-362-1 | -      |     | X     | X    | X    | X     | X    |

**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

## 16. Other information

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com

**Creation Date** 15-July-2014  
**Revision Date** 17-January-2018  
**Print Date** 17-January-2018

**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals. SDS sections updated. 2.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**