



# SAFETY DATA SHEET

**Creation Date** 22-Sep-2009

**Revision Date** 19-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

<b>Product Name</b>	Theophylline
<b>Cat No. :</b>	AC250310000; AC250310010; AC250310050; AC250312500
<b>CAS No</b>	58-55-9
<b>Synonyms</b>	3,7-Dihydro-1,3-dimethyl-1H-purine-2,6-dione; 1,3-Dimethylxanthine; 1,3-Dimethyl-2,6-dioxo-1,2,3,6-tetrahydropurine
<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	Food, drug, pesticide or biocidal product use.

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

## Company

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

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

## **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

## Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024).

Acute oral toxicity Category 3  
Reproductive Toxicity Category 1B

## Label Elements

## Signal Word

## Danger

## Hazard Statements

Toxic if swallowed  
May damage the unborn child

**Precautionary Statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Get medical attention/advice

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Rinse mouth

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

**3. Composition/information on Ingredients**

Component	CAS No	Weight %
Theophylline	58-55-9	<=100

**4. First-aid measures****General Advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact**

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. 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. Immediate medical attention is required.

**Ingestion**

Do NOT induce vomiting. Call a physician or poison control center immediately.

**Most important symptoms and effects**

None reasonably foreseeable.

**Notes to Physician**

Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point Method -** No information available  
No information available

**Autoignition Temperature** Not applicable  
**Explosion Limits**

**Upper** No data available  
**Lower** No data available

**Sensitivity to Mechanical Impact** No information available  
**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</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. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

	<b>Health</b> 3	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Physical hazards</b> N/A
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## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and Storage

**Handling** Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

**Storage.** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure controls / personal protection

**Exposure Guidelines** 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.

**Personal Protective Equipment**

<b>Eye/face 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>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	No protective equipment is needed under normal use conditions.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

<b>Physical State</b>	Powder Solid	
<b>Color</b>	White	
<b>Odor</b>	Odorless	
<b>Odor Threshold</b>	No information available	
<b>Property</b>	<b>Values</b>	<b>Remarks</b>
<b>Melting Point/Range</b>	270 - 274 °C / 518 - 525.2 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	No information available	
<b>Flash Point</b>	No information available	<b>Method</b> - No information available
<b>Flammability (liquid)</b>	Not applicable	
<b>Flammability (solid,gas)</b>	No information available	Solid
<b>Explosion Limits</b>	No data available	
<b>Autoignition Temperature</b>	Not applicable	
<b>Decomposition Temperature</b>	No data available	
<b>pH</b>	5	8 g/l aq.sol
<b>Viscosity</b>	Not applicable	
<b>Water Solubility</b>	8.3 g/l (20°C)	Solid
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Theophylline	-0.008	
<b>Vapor Pressure</b>	No data available	
<b>Density / Specific Gravity</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Vapor Density</b>	Not applicable	
<b>Particle characteristics</b>	No data available	Solid
<b>Other Information</b>		
<b>Molecular Formula</b>	C7 H8 N4 O2	
<b>Molecular Weight</b>	180.17	
<b>Evaporation Rate</b>	Not applicable - Solid	

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	No information available.
<b>Conditions to Avoid</b>	Incompatible products.
<b>Incompatible Materials</b>	Strong oxidizing agents

**Hazardous Decomposition Products** Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Information on expected route of exposure

**Inhalation** Avoid breathing dust or spray mist. May be harmful if inhaled.

**Ingestion** May be harmful if swallowed.

**Eyes** Avoid contact with eyes.

**Skin** Avoid contact with skin.

### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Theophylline	LD50 = 225 mg/kg ( Rat )	LD50 > 2000 mg/kg ( Rabbit )	LC50 > 6.7 mg/L ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** No data available

**(c) serious eye damage/irritation;** No data available

**(d) respiratory or skin sensitization;**

<b>Respiratory</b>	No data available
<b>Skin</b>	No data available

**(e) germ cell mutagenicity;** No data available

**(f) carcinogenicity;**

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Theophylline	58-55-9	Not listed				

**(g) reproductive toxicity;** Category 1B

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** None known.

**(j) aspiration hazard;** Solid  
Not applicable

### **Other Adverse Effects**

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

**delayed**

**Other Adverse Effects**

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

**Ecotoxicity**

Do not empty into drains. .

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Theophylline	-0.008

## 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**

<b>UN-No</b>	UN2811
<b>Proper Shipping Name</b>	TOXIC SOLIDS, ORGANIC, N.O.S.
<b>Technical Shipping Name</b>	Theophylline
<b>Hazard Class</b>	6.1
<b>Packing Group</b>	III

**TDG**

<b>UN-No</b>	UN2811
<b>Proper Shipping Name</b>	TOXIC SOLID, ORGANIC, N.O.S.
<b>Technical Shipping Name</b>	Theophylline
<b>Hazard Class</b>	6.1
<b>Packing Group</b>	III

**IATA**

<b>UN-No</b>	UN2811
<b>Proper Shipping Name</b>	TOXIC SOLID, ORGANIC, N.O.S.
<b>Technical Shipping Name</b>	Theophylline
<b>Hazard Class</b>	6.1
<b>Packing Group</b>	III

**IMDG/IMO**

<b>UN-No</b>	UN2811
<b>Proper Shipping Name</b>	TOXIC SOLID, ORGANIC, N.O.S.
<b>Technical Shipping Name</b>	Theophylline
<b>Hazard Class</b>	6.1
<b>Packing Group</b>	III

## 15. Regulatory Information

**United States of America Inventory**

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Theophylline	58-55-9	X	ACTIVE	-

**Legend:**

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**      Not applicable

**TSCA 12(b) - Notices of Export**      Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Theophylline	58-55-9	X	-	200-385-7	X	X		X	X	KE-10629

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**      Not applicable

**Clean Air Act**      Not applicable

**OSHA - Occupational Safety and Health Administration**      Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65**      This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**      Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ):      N

DOT Marine Pollutant      N

DOT Severe Marine Pollutant      N

**U.S. Department of Homeland Security**      This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade

No information available

## Authorisation/Restrictions according to EU REACH

Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Theophylline	58-55-9	-	Use restricted. See entry 30. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-

## Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Theophylline	58-55-9	Listed	Not applicable	Not applicable	Not applicable

## Contains component(s) that meet a 'definition' of per &amp; poly fluoroalkyl substance (PFAS)?

Not applicable

## Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Theophylline	58-55-9	Not applicable	Not applicable	Not applicable	Not applicable

## 16. Other Information

## Prepared By

Product stewardship (Regulatory Affairs)  
 Thermo Fisher Scientific  
 email - begel.sdsdesk@thermofisher.com

## Creation Date

22-Sep-2009

## Revision Date

19-Dec-2025

## Print Date

19-Dec-2025

## Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

## 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**