1 Identification

Product identifier

Product name: Quinine hemisulfate monohydrate

Stock number: A17036
CAS Number: 6119-70-6

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Alfa Aesar Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

![GHS07](image)

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

![GHS07](image)

Signal word Warning

Hazard statements

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

<table>
<thead>
<tr>
<th>Health (acute effects)</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
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</tbody>
</table>

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:
6119-70-6 Quinine hemisulfate monohydrate

4 First-aid measures

Description of first aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

(Contd. on page 2)
5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents: Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
- Carbon monoxide
- Sulfur oxides (SOx)
- Nitrogen oxides (NOx)

Advice for firefighters
- Wear self-contained respirator.
- Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
- Wear protective equipment. Keep unprotected persons away.

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:
- Dispose of contaminated material as waste according to section 13.
- Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling
- Keep container tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation at the workplace.

Information about protection against explosions and fires: No information known.

Conditions for safe storage, including any incompatibilities
- Storage
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility:
  - Store in the dark.
  - Store away from strong bases.
  - Store away from oxidizing agents.
  - Store away from ammonia.

Further information about storage conditions:
- Store in cool, dry conditions in well sealed containers.
- Protect from exposure to light.

Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
- Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limits values that require monitoring at the workplace:
- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: No data.

Exposure controls

Personal protective equipment

General protective and hygienic measures
- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Remove all soiled and contaminated clothing immediately.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.
- Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:
- Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:
- Impervious gloves
- Check protective gloves prior to each use for their proper condition.
- The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves
- Nitrile rubber, NBR

Penetration time of glove material (in minutes) 480

Glove thickness 0.11 mm

Eye protection: Safety glasses

Body protection: Protective work clothing.
Product name: Quinine hemisulfate monohydrate

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
Form: Powder
Odor: Odorless
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition
Melting point/Melting range: 217-218 °C (423-424 °F) (dec)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable
Flammability (solid, gaseous) Not determined.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not applicable.
Density: Not determined
Relative density: Not determined
Vapor density: Not applicable.
Evaporation rate: Not applicable.

Solubility in / Miscibility with
Water at 20 °C (68 °F): 1.2 g/l
Partition coefficient (n-octanol/water): Not determined.
Vapor density:
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.

Other information:
No further relevant information available.

10 Stability and reactivity

Reactivity: No information known.
Chemical stability: Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions: Reacts with strong oxidizing agents
Conditions to avoid: No further relevant information available.
Incompatible materials:
Oxidizing agents
Bases
Ammonia
Light

Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Nitrogen oxides
Sulfur oxides (SOx)

11 Toxicological information

Information on toxicological effects

Acute toxicity:
Harmful if inhaled.
Harmful in contact with skin.
Harmful if swallowed.

Danger through skin absorption:
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Causes skin irritation.
Eye irritation or corrosion: Causes serious eye irritation.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: May cause respiratory irritation.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.

Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Carcinogenic categories
OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.

Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects: No further relevant information available.
Product name: Quinine hemisulfate monohydrate

13 Disposal considerations
Waste treatment methods
Recommendation: Consult state, local or national regulations to ensure proper disposal.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14 Transport information
UN-Number
DOT, ADN, IMDG, IATA: Not applicable

UN proper shipping name
DOT, ADN, IMDG, IATA: Not applicable

Transport hazard class(es)
DOT, ADN, IMDG, IATA: Not applicable

Class: Not applicable

Packing group
DOT, IMDG, IATA: Not applicable

Environmental hazards: Not applicable.

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:
DOT Marine Pollutant (DOT): No

UN "Model Regulation": -

15 Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements: The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

Signal word: Warning

Hazard statements
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P405 Store locked up.
P408 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed on the Canadian Domestic Substances List (DSL).
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65
Prop 65 - Chemicals known to cause cancer: Substance is not listed.
Prop 65 - Developmental toxicity: Substance is not listed.
Prop 65 - Developmental toxicity, female: Substance is not listed.
Prop 65 - Developmental toxicity, male: Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations
Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or suitable for such use or for human consumption.

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

CRC tables: Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use): Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of the suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision: 01/25/2016

Abbreviations and acronyms:
R50: Reglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
DOT: US Department of Transportation
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)
Product name: **Quinine hemisulfate monohydrate**

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<tr>
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<tr>
<td>Acute Tox. 4: Acute toxicity</td>
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</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation</td>
<td>Hazard Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A: Serious eye damage/eye irritation</td>
<td>Hazard Category 2A</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity - Single exposure</td>
<td>Hazard Category 3</td>
</tr>
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