1 Identification

Product identifier

Product name: Zinc acetate dihydrate

Stock number: 11559

CAS Number:

EC number:

209-170-2

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

Acute Tox. 4 H302 Harmful if swallowed.

Eye Irrit. 2A H319 Causes serious eye 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

Signal word Warning

Hazard statements

H302 Harmful if swallowed.

H319 Causes serious eye irritation.

Precautionary statements

P264 Wear protective gloves/protective clothing/eye protection/face protection.

P280 Wash thoroughly after handling.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/…/if you feel unwell.

P337+P313 If eye irritation persists: Get medical advice/attention.

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)

Health (acute effects) = 2

Flammability = 1

Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS® Description:

5970-45-6 Zinc acetate dihydrate

Identification number(s):

EC number: 209-170-2

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.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)
After swallowing: Seek medical treatment.

Information for doctor:
Most important symptoms and effects, both acute and delayed: No further relevant information available.
Indication of any immediate medical attention and special treatment needed: No further relevant information available.

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 and carbon dioxide
Zinc oxide

Advice for firefighters
Protective equipment:
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.
Ensure adequate ventilation.
Environmental precautions:
Do not allow product to reach sewage system or any water course.

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

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 away from oxidizing agents.

Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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 limit 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.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.

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

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.

Penetration time of glove material (in minutes):
Not determined

Eye protection:
Safety glasses

Body protection:
Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information
Appearance:
Form: Crystalline
Color: White
Odor: Weak, characteristic
Odor threshold: Not determined.

pH-value (50 g/l) at 20 °C (68 °F):
6-7

Change in condition
Melting point/Melting range: 237 °C (459 °F)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined
Flammability (solid, gaseous): Not determined
Ignition temperature: Not determined
Decomposition temperature: Not determined.
Auto igniting: Not determined.

Danger of explosion: Not determined.
Explosion limits:
  Lower: Not determined
  Upper: Not determined
Vapor pressure: Not applicable.
Density at 20 °C (68 °F): 1.735 g/cm³ (14.479 lbs/gal)
Relative density: Not applicable.
Vapor density: Not applicable.
Evaporation rate: Not applicable.
Solubility in / Miscibility with Water at 20 °C (68 °F): 430 g/l
Partition coefficient (n-octanol/water): Not determined.
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
Hazardous decomposition products:
  Carbon monoxide and carbon dioxide
  Zinc oxide

11 Toxicological information
Information on toxicological effects
Acute toxicity:
  Harmful if swallowed.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
  LD/LC50 values that are relevant for classification:
    Oral LD50 794 mg/kg (rat)
    Skinn irritation or corrosion: May cause irritation
    Eye irritation or corrosion: Causes serious eye irritation.
    Sensitization: No sensitizing effects known.
    Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
    Carcinogenicity: EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
    Reproductive toxicity: No effects known.
    Specific target organ system toxicity - repeated exposure: No effects known.
    Specific target organ system toxicity - single exposure: No effects known.
    Aspiration hazard: No effects known.
    Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
    Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information
Toxicity:
  Aquatic toxicity: No further relevant information available.
  Persistence and degradability: No further relevant information available.
  Bioaccumulative potential: Not further relevant information available.
  Mobility in soil: Not further relevant information available.
  Ecotoxic effects:
  Remark: Very toxic for aquatic organisms
  Additional ecological information:
  General notes:
    Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    Danger to drinkingwater if even extremely small quantities leak into the ground.
    Also poisonous for fish and plankton in water bodies.
    May cause long lasting harmful effects to aquatic life.
    Avoid transfer into the environment.
    Very toxic for aquatic organisms
Results of PBT and vPvB assessment
  PBT: Not applicable.
  vPvB: Not applicable.
  Other adverse effects: No further relevant information available.

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

14 Transport information
UN-Number: UN3077
DOT, IMDG, IATA

UN proper shipping name
DOT Environmentally hazardous substances, solid, n.o.s. (Zinc acetate dihydrate)
IMDG ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc acetate dihydrate)
IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc acetate dihydrate)
Product name: Zinc acetate dihydrate

(Contd. of page 3)

Transport hazard class(es)
DOT, IMDG, IATA

<table>
<thead>
<tr>
<th>Class</th>
<th>Label</th>
<th>Class</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
<td>(M7)</td>
<td>9</td>
</tr>
<tr>
<td>Miscellaneous dangerous substances and articles</td>
<td>Miscellaneous dangerous substances and articles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Packing group
DOT, IMDG, IATA
III

Environmental hazards:
Marine pollutant (IMDG):
Special marking (ADR):
Special marking (IATA):
Symbol (fish and tree)
Symbol (fish and tree)
Symbol (fish and tree)

Special precautions for user
EMS Number:
Warning: Miscellaneous dangerous substances and articles
F-A-S-F

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

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

Remarks:
Special marking with the symbol (fish and tree).

UN "Model Regulation":
UN3077, Environmentally hazardous substances, solid, n.o.s. (Zinc acetate dihydrate), 9, III

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

GHS07

Signal word Warning
Hazard statements
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P405 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor.../if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

SARA Section 313 (specific toxic chemical listings)
5970-45-5 Zinc acetate dihydrate

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.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

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.

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 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 11/23/2015 / -

Abbreviations and acronyms:
AICD: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LD50: Lethal concentration, 50 percent
LC50: 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)

USA