4-Aminosalicylic acid

sc-277101

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
4-Aminosalicylic acid

STATEMENT OF HAZARDOUS NATURE

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800
EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Body Contact</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td>2</td>
<td></td>
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</tbody>
</table>

CANADIAN WHMIS SYMBOLS

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4
EMERGENCY OVERVIEW

RISK
Harmful if swallowed.
Irritating to eyes, respiratory system and skin.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
• Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
• High oral doses of salicylates, such as aspirin, may cause a mild burning pain in the throat and stomach, causing vomiting. This is followed (within hours) by deep, rapid breathing, tiredness, nausea and further vomiting, thirst and diarrhea.

EYE
• This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

SKIN
• This material can cause inflammation of the skin on contact in some persons.
• The material may accentuate any pre-existing dermatitis condition.
• Open cuts, abraded or irritated skin should not be exposed to this material.
• Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED
• The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
• Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS
• Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
There is limited evidence that, skin contact with this product is more likely to cause a sensitization reaction in some persons compared to the general population.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

• Chronic exposure to salicylates produce problems with metabolism, central system disturbances, or kidney damage. Those with pre-existing damage to the eye, skin or kidney are especially at risk.

Allergic reactions are recorded in over 5% of adults treated with the sodium p-aminosalicylate. This occurs between the second and sixth week of treatment. Fever, arthralgia, lymphadenopathy, and more rarely a syndrome resembling mononucleosis may also occur. Other (apparently) allergic reactions to aminosalicylate include jaundice, liver necrosis, pancreatitis, pulmonary infiltration, encephalitis, nephritis, and renal failure. Skin rashes often take the form of macular or morbilliform exanthema. Exfoliative dermatitis is common.
Blood disorders include haemolytic anaemia, agranulocytosis, leukopenia, and thrombocytopenia. Prolonged treatment with sodium p-aminosalicylate may induce goitre and hypothyroidism resulting from interference with iodine utilisation.
The p-aminophenyl (phenylamine) group formed during metabolism of aminosalicylate may provoke reaction in hypersensitive individuals (cross-sensitive) to sulfonamides, phenacetin, sulfones and to certain hair-dyes containing related compounds p-Aminosalicylic acid induces agranulocytosis of an immunological type.
Exposure to small quantities may induce hypersensitivity reactions characterized by acute bronchospasm, hives (urticaria), deep dermal wheals (angiokeratotic edema), running nose (rhinitis) and blurred vision . Anaphylactic shock and skin rash (non-thrombocytopenic purpura) may occur.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-aminosalicylic acid</td>
<td>65-49-6</td>
<td>&gt;98</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES
SWALLOWED
· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

EYE
■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN
■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED
· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN
■ for salicylate intoxication:
· Pending gastric lavage, use emetics such as syrup of ipecac or delay gastric emptying and absorption by swallowing a slurry of activated charcoal. Do not give ipecac after charcoal.
· Gastric lavage with water or perhaps sodium bicarbonate solution (3%-5%). Mild alkali delays salicylate absorption from the stomach and perhaps slightly from the duodenum.
For p-aminosalicylates:
· Hypersensitivity may be treated with antihistamines for symptomatic relief. Corticosteroids have been given as an adjunct to desensitisation.
· If goitre or hypothyroidism occurs thyroxine sodium should be given.

MARTINDALE: The Extra Pharmacopoeia, 27th Ed.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG): Negligible
Upper Explosive Limit (%): Not available.
Specific Gravity (water=1): >1.0
Lower Explosive Limit (%): Not available.

EXTINGUISHING MEDIA
· Alcohol stable foam.
· Foam.
· Dry chemical powder.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· Combustible solid which burns but propagates flame with difficulty.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx), other pyrolysis products typical of burning organic material.
May emit poisonous fumes.
May emit corrosive fumes.

FIRE INCOMPATIBILITY
■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION
Glasses:
Safety Glasses.
Chemical goggles.
Gloves:
Respirator:
Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
· Avoid contact with skin and eyes.
· Control personal contact by using protective equipment.
· Use dry clean up procedures and avoid generating dust.
· Place in a suitable, labelled container for waste disposal.

MAJOR SPILLS
■ Moderate hazard.
· CAUTION: Advise personnel in area.
PROCEDURE FOR HANDLING
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS
- Glass container.
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS
- Store in original containers.
- Keep containers securely sealed.

<table>
<thead>
<tr>
<th>Source</th>
<th>Material</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
<th>STEL ppm</th>
<th>STEL mg/m³</th>
<th>Peak ppm</th>
<th>Peak mg/m³</th>
<th>TWA F/CC</th>
<th>Notes</th>
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<tbody>
<tr>
<td>US - California Permissible Exposure Limits for Chemical Contaminants</td>
<td>4-aminosalicylic acid (Particulates not otherwise regulated Respirable fraction)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(n)</td>
</tr>
<tr>
<td>US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants</td>
<td>4-aminosalicylic acid (Particulates not otherwise regulated Respirable fraction)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants</td>
<td>4-aminosalicylic acid (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)</td>
<td>5</td>
<td></td>
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<tr>
<td>US - Michigan Exposure Limits for Air Contaminants</td>
<td>4-aminosalicylic acid (Particulates not otherwise regulated, Respirable dust)</td>
<td>5</td>
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<td></td>
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<tr>
<td>Canada - Prince Edward Island Occupational Exposure Limits</td>
<td>4-aminosalicylic acid (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)</td>
<td>10</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>See Appendix B current TLV/BEI Book</td>
</tr>
</tbody>
</table>

PERSONAL PROTECTION

RESPIRATOR
Particulate
Consult your EHS staff for recommendations

EYE
- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocaoutchouc
- polyvinyl chloride

Gloves should be examined for wear and/or degradation constantly.

OTHER
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

ENGINEERING CONTROLS
- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES
Solid. Does not mix with water. Sinks in water.

<table>
<thead>
<tr>
<th>State</th>
<th>Divided solid</th>
<th>Molecular Weight</th>
<th>153.14</th>
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</thead>
<tbody>
<tr>
<td>Melting Range (°F)</td>
<td>302 decomposes.</td>
<td>Viscosity</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Range (°F)</td>
<td>Not applicable</td>
<td>Solubility in water (g/L)</td>
<td>Partly miscible</td>
</tr>
<tr>
<td>Flash Point (°F)</td>
<td>&gt;141.8</td>
<td>pH (1% solution)</td>
<td>3-3.7 satd.solin.</td>
</tr>
<tr>
<td>Decomposition Temp (°F)</td>
<td>302</td>
<td>pH (as supplied)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition Temp (°F)</td>
<td>Not available.</td>
<td>Vapour Pressure (mmHG)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not available.</td>
<td>Specific Gravity (water=1)</td>
<td>&gt;1.0</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available.</td>
<td>Relative Vapor Density (air=1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Volatile Component (%vol)</td>
<td>Negligible</td>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
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</table>

APPEARANCE
White or almost white bulky powder which darkens on exposure to light and/or air. Odourless or slight acetic odour and a mild acidic unpleasant taste. Soluble in dilute sodium hydroxide and dilute nitric acid, slightly soluble in ether, practically insoluble in benzene. pH of (0.1% water soluble) 3.5. Water solutions decompose with evolution of carbon dioxide. Darkened solutions should not be used.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY
- Presence of incompatible materials.
**Nitrosamine** is present in sufficient quantities in sunscreens to be of concern. Padimate-O as the active ingredient. Nitrosamines themselves can be carcinogenic; however, at this time it is uncertain whether this nitrosamine is present in sufficient quantities in sunscreens to be of concern.

A nitrosamine known as NPABAO (2-ethylhexyl-4-(N-methyl-N-nitrosoamino)benzoate has been found in certain sunscreens containing padimate-O. Cross-reactivity may also occur with benzocaine and its derivatives of PABA (e.g. benzocaine).

PABA is taken by mouth for skin conditions including vitiligo, pemphigus, dermatomyositis, morphea, lymphoblastoma cutis, Peyronie's disease, and scleroderma. PABA is also used to treat infertility in women, arthritis, anaemia), rheumatic fever, constipation, systemic lupus erythematosus (SLE), and headache. It is also used to darken gray hair, prevent hair loss, make skin look younger, and prevent sunburn. PABA and its derivatives is best known as a sunscreen that is applied to the skin. Local anesthetics and antibiotics are available derivatives of PABA.

**Section 11 - TOXICOLOGICAL INFORMATION**

4-AMINOSALICYLIC ACID

**TOXICITY AND IRRITATION**

<table>
<thead>
<tr>
<th>4-AMINOSALICYLIC ACID:</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.</td>
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</table>

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (mouse) LD50: 4000 mg/kg</td>
<td>Eye (rabbit): 100 mg/24h Moderate</td>
</tr>
</tbody>
</table>

**TOXICITY**

**IRRITATION**

4-AMINOSALICYLIC ACID: sunscreens containing nitrosamine to be of concern.

A nitrosamine known as NPABAO (2-ethylhexyl-4-(N-methyl-N-nitrosoamino)benzoate has been found in certain sunscreens containing padimate-O as the active ingredient. Nitrosamines themselves can be carcinogenic; however, at this time it is uncertain whether this nitrosamine is present in sufficient quantities in sunscreens to be of concern.
Padimate O absorbs ultraviolet rays, thereby preventing direct DNA damage by UV-B. However, the thus excited padimate O molecule can then react with DNA and produce indirect DNA damage, similar to the effects of ionizing radiation. A study in 1993 demonstrated the sunlight-induced mutagenicity of Padimate O. The photobiological properties of padimate O resemble those of Michler's ketone which is considered photocarcinogenic in rats and mice. These findings suggest that padimate O might also be photocarcinogenic.

Sulfonamides (sulfa drugs) are chemically similar to PABA, and their antibacterial activity is due to their ability to interfere with PABA utilization by bacteria. The chemically related 4-aminosalicylic acid, used as an antibiotic has produced, allergic reactions are recorded in over 5% of adults treated with the sodium salt. Fever, arthritis, lymphadenopathy, and more rarely a syndrome resembling mononucleosis may also occur. Other (apparently) allergic reactions to aminosalicylate include jaundice, liver necrosis, pancreatitis, pulmonary infiltration, encephalitis, nephritis, and renal failure. Skin rashes often occurs after treatment. Exfoliative dermatitis is common. The p-aminophenyl group formed during metabolism of aminosalicylate may provoke reaction in hypersensitive individuals (cross-sensitive) to sulfonamides, phenacetin, sulfones and to certain hair-dyes containing related compounds.

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Water/Soil Persistence:</th>
<th>Air Persistence:</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
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<tr>
<td>4-aminosalicylic acid</td>
<td>LOW</td>
<td>LOW</td>
<td>HIGH</td>
<td></td>
</tr>
</tbody>
</table>

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 D1 D2 D3 E1 E2 E3 Cas No / RTECS No

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acute aquatic toxicity LC/EC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation & corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities. For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lung injury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Puncture containers to prevent re-use and bury at an authorized landfill.
- Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
- A Hierarchy of Controls seems to be common - the user should investigate:
  - Reduction
  - Reuse
  - Recycling
  - Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

4-aminosalicylic acid (CAS: 65-49-6) is found on the following regulatory lists:
- "Canada Ingredient Disclosure List (SOR/88-64)"
- "Canada Non-Domestic Substances List (NDSL)"
- "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)"
- "US Toxic Substances Control Act (TSCA) - Inventory"
Section 16 - OTHER INFORMATION

LIMITED EVIDENCE
- Cumulative effects may result following exposure*.
- Possible skin sensitiser*.

* (limited evidence).

ND
Substance CAS Suggested codes 4-aminosalicylic acid 65-49-6

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Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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