1. PRODUCT AND COMPANY IDENTIFICATION

Chemical Name Alendronic Acid Monosodium Salt Trihydrate

Catalogue # A521250
Company Toronto Research Chemicals
2 Brisbane Road
Toronto, ON M3J 2J8
CANADA
Telephone +14166659696
FAX +14166654439
Emergency# +14166659696
Email orders@trc-canada.com

2. HAZARDS IDENTIFICATION

WHMIS Classification
D1B Toxic Material Causing Immediate and Serious Toxic Effects
D2B Toxic if swallowed, Toxic if inhaled

HMIS Classification
Health hazard: 2
Flammability: 0
Physical hazards: 0

Potential Health Effects
Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Harmful if swallowed.

GHS Classification
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements
Signal word Warning

Hazard statements
H302 Harmful if swallowed.
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/ eye protection/ face protection.
P301/P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302/P352 IF ON SKIN: Wash with plenty of soap and water.
P304/P340 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.
P312            Call a POISON CENTER or doctor/physician if you feel unwell.
P332/P313       If skin irritation occurs: Get medical advice/attention.
P337/P313       If eye irritation persists: Get medical advice/attention.

GHS Label Pictograms

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Formula: C₄H₁₈NNaO₁₀P₂
Molecular Weight: 325.12
CAS Registry #: 121268-17-5
EC#: P,P'-(4-Amino-1-hydroxybutylidene)bisphosphonic Acid Sodium Salt Hydrate; Alendronate Monosodium Trihydrate; Alendronate Sodium Hydrate; Alendronic Acid Monosodium Salt Trihydrate; Monosodium Alendronate Trihydrate; Sodium Alendronate Hydrate;

Synonyms:

4. FIRST AID MEASURES

General Advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust or aerosol formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.
Methods and materials for containment and cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust or aerosols. Provide appropriate exhaust ventilation at places where dust/aerosol is formed. Normal measures for preventative fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Store at -20°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment
Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls
Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
White solid

Safety data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling point</td>
<td>N/A</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>N/A</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting point</td>
<td>245°C (dec.)</td>
</tr>
<tr>
<td>Flash point</td>
<td>N/A</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Water solubility</td>
<td>N/A</td>
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</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents.

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: carbon oxides, nitrogen oxides, phosphorous

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11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Irritation and corrosion</th>
<th>Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

Reproductive toxicity/Teratogenicity
no data available

Carcinogenicity
IARC: Not classified as a known, possible or probable carcinogen by IARC.

Potential health effects

Inhalation  May be harmful if inhaled. Causes respiratory tract irritation.
Skin  May be harmful if absorbed through skin. Causes skin irritation.
Eyes  Causes eye irritation.
Ingestion  Harmful if swallowed.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Persistence and degradability</th>
<th>Bioaccumulative potential</th>
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</thead>
<tbody>
<tr>
<td>no data available</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)/IMDG/IATA
not dangerous goods

15. REGULATORY INFORMATION

DSL Status
Product is not on the Canadian DSL or NDSL list.

WHMIS Classification

<table>
<thead>
<tr>
<th>D1B</th>
<th>Toxic Material Causing Immediate Toxicity</th>
<th>D2B</th>
<th>Toxic Material Causing Immediate Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toxic by ingestion</td>
<td></td>
<td>Moderate respiratory irritant</td>
</tr>
<tr>
<td></td>
<td>Moderate skin irritant</td>
<td></td>
<td>Moderate eye irritant</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Further information
Copyright 2010 Toronto Research Chemicals Inc. Copies may be made for internal use only. The above information is believed to be correct to the best of our knowledge, but is not to be deemed as all-inclusive and is to be only used as a guide. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Please take all due care when handling this product.

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