

3 Hazards identification

- **Hazard description:** Xn Harmful
- **Information pertaining to particular dangers for man and environment**
 - R 62 Possible risk of impaired fertility
 - R 63 Possible risk of harm to the unborn child
 - R 36/37 Irritating to eyes and respiratory system.

4 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.
- **After swallowing** Seek immediate medical advice.
- **Information for doctor**
- **The following symptoms may occur:**
 - Nausea
 - Gastric or intestinal disorders.
 - Cramp

5 Fire fighting measures

- **Suitable extinguishing agents**
CO2, extinguishing powder or water spray. Fight larger fires with water spray.
- **Protective equipment:**
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **Measures for environmental protection:**
Do not allow material to be released to the environment without proper governmental permits.
- **Measures for cleaning/collecting:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Additional information:**
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**
- **Information for safe handling:**
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Prevent formation of dust.
- **Information about protection against explosions and fires:**
The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
No special requirements.
- **Information about storage in one common storage facility:**
Do not store together with acids.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Store under lock and key and with access restricted to technical experts or their assistants only.

8 Exposure controls and 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.

Components with limit values that require monitoring at the workplace:

Borates, tetra, sodium salts	
	mg/m ³
ACGIH TLV decahydrate	1-anhydrous, pentahydrate; 5-
Belgium TWA	5
Denmark TWA	5
France TWA	5
Ireland TWA decahydrate	1-anhydrous, pentahydrate; 5-
Netherlands TWA decahydrate	1-anhydrous, pentahydrate; 5-
Sweden TWA	2; 5-STEL
Switzerland TWA	5
United Kingdom TWA decahydrate	1-anhydrous, pentahydrate; 5-

- **Additional information:** No data
- **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.
- **Breathing equipment:**
Use suitable respirator when high concentrations are present.
- **Protection of hands:** Impervious gloves
- **Eye protection:**
Safety glasses
Tightly sealed goggles
Full face protection
- **Body protection:** Protective work clothing.

9 Physical and chemical properties:

- **Form:** Powder
- **Color:** White
- **Odor:** Odorless

<u>Method</u>	<u>Value/Range</u>	<u>Unit</u>
• Change in condition		
• Melting point/Melting range:		75 ° C
• Boiling point/Boiling range:	Not determined	
• Sublimation temperature / start:	Not determined	
• Flash point:	Not applicable	
• Flammability (solid, gaseous)	Product is not flammable.	
• Ignition temperature:	Not determined	
• Decomposition temperature:	Not determined	
• Danger of explosion: Product does not present an explosion hazard.		
• Explosion limits:		
• Lower:	Not determined	
• Upper:	Not determined	
• Vapor pressure:	Not determined	
• Density:	at 20 ° C	1.730 g/cm ³
• Solubility in / Miscibility with		
• Water:	Slightly soluble	

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
Decomposition will not occur if used and stored according to specifications.
- **Materials to be avoided:**
Acid anhydrides
Alkali metals
Acids
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** Metal oxide fume

11 Toxicological information

- **Acute toxicity:**
LD/Lc50 values that are relevant for classification:

Oral: LD50: 5330 mg/kg (gpg)
LD50: 2000 mg/kg (mus)
LD50: 2660 mg/kg (rat)
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):**
Reproductive effects have been observed on tests with laboratory animals.
- **Subacute to chronic toxicity:**
Boron effects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhea, followed by profound shock and coma. The temperature may become subnormal and a scarletina form rash may cover the entire body.
- **Additional toxicological information:**
Possible risk of impaired fertility.
Possible risk of harm to the unborn child.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information:

- **General notes:**
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

- **Product:**
- **Recommendation**
Consult state, local or national regulations for proper disposal.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

- **DOT regulations:**
- **Hazard class:** None
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** None
- **Maritime transport IMDG:**
- **IMDG Class:** None
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** None
- **Transport/Additional information:**
Not dangerous according to the above specifications.

15 Regulations

- **Product related hazard informations:**

- **Hazard symbols:** Xn Harmful

- **Risk phrases:**
 - 62 Possible risk of impaired fertility
 - 63 Possible risk of harm to the unborn child
 - 36/37 Irritating to eyes and respiratory system.

- **Safety phrases:**
 - 22 Do not breathe dust.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 - 45 In case of accident or if you feel unwell, seek medical advice immediately.

- **National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

- **Information about limitation of use:**

For use only by technically qualified individuals.

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 MSDS:** Health, Safety and Environmental Department.
- **Contact:** Darrell R. Sanders