

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/02/2004



Reviewed on 02/02/2004

1 Identification of substance

- **Product details**
- **Trade name:** Nitrate HR 2
- **Product Use:** Reagent
- **Part of Orion:** AC2007
- **MSDS p/n:** 233251-001 Revision D
- **Manufacturer/Supplier:**
Thermo Electron Corporation
Environmental Instruments
Water Analysis Group
166 Cummings Center
Beverly, MA 01915-6110
USA
Phone: 978-232-6000
Made in Germany

2 Composition / Data on components

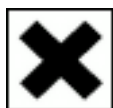
- **Chemical characterization**
- **Description:** Mixture: consisting of the following hazardous components.

CAS No.	Description		
CAS: 10034-88-5 EINECS: 231-665-7	sodium hydrogensulphate	 Xi; R 41	10-20%
CAS: 121-57-3 EINECS: 204-482-5	sulphanilic acid	 Xi; R 36/38-43	10-20%

- **Additional information:**
For the wording of the listed risk phrases refer to section 16.
The remaining 60% contains no hazardous ingredients according to OSHA definition.

3 Hazards identification

- **Hazard description:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
Risk of serious damage to eyes.
May cause sensitization by skin contact.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0 - 4)**
Health = 2
Fire = 0
Reactivity = 0

4 First aid measures

- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness remove to fresh air, apply artificial respiration, and consult a physician.

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- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **The following symptoms may occur:**
After inhalation:
Mucous membrane irritation
Coughing
Breathing difficulty
After swallowing:
Gastric or intestinal disorders
Nausea
Vomiting

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Development of hazardous combustion gases or vapours possible in the event of fire.
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information:** Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:** Pick up mechanically.

7 Handling and storage

- **Handling:**
· **Information for safe handling:** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.
- **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Store in dry conditions.
· **Storage class:** Not required.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
· **General protective and hygienic measures:**
Immediately remove all soiled and contaminated clothing.

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Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

After use of gloves apply skin-cleaning agents and skin cosmetics.

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Natural rubber, NR

PVC or PE gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Tightly sealed goggles

· **Body protection:** Light weight protective clothing

9 Physical and chemical properties

· **Odor Threshold:** Not applicable.

· **Form:** Tablets

· **Color:** White

· **Odor:** Odorless

· **Melting point/Melting range:** Undetermined.

· **Boiling point/Boiling range:** 300°C (572°F)

· **Freezing Point:** Not applicable.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):**

Upper Flammable Limit: Not applicable.

Lower Flammable Limit: Not applicable.

· **Ignition temperature:** Undetermined.

· **Sensitivity to Mechanical Impact:** None

· **Sensitivity to Static Discharge:** None

· **Auto igniting:** Product is not selfigniting.

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

· **Vapor Pressure at 20°C (68°F):** 2.7 hPa (2 mm Hg)

· **Vapor Density:** Not applicable.

· **Specific Gravity:** Not applicable.

· **Density at 20°C (68°F):** 1.572 g/cm³

· **Solubility in / Miscibility with**

Water: Soluble.

· **Coefficient of Water / Oil Distribution:** Not applicable.

· **pH-value (10.2 g/l) at 20°C (68°F):** 2.3

· **Solvent content:**

Organic solvents: 0.0 %

· **Solids content:** 100.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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- **Dangerous reactions** Corrosive action on metals.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

10043-35-3 boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight

Oral	LD50	2660 mg/kg (rat)
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Dermal	LD50	> 2000 mg/kg (rat)
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121-57-3 sulphanic acid

Oral	LD50	12300 mg/kg (rat)
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· Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through skin contact.

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenicity:** NTP? IARC Monographs? OSHA Regulated? Not found on these lists. see chapter 8 / 15
- **Teratogenicity:** Not found.
- **Mutagenicity:** Not found.
- **Reproductive Toxicity:** Not found.
- **Synergistic Products:** None

12 Ecological information

· Ecotoxicological effects:

· Aquatic toxicity:

10043-35-3 boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight

EC50	133 mg/l/48h (Daphnia magna)
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· General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

13 Disposal considerations

· Product:

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· DOT regulations:



- Hazard class: 8
- Identification number: UN3260
- Packing group: III
- Proper shipping name (technical name): CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (sodium hydrogensulphate)
- Label: 8

· Land transport ADR/RID (cross-border):



- ADR/RID class: 8 (C2) Corrosive substances
- Danger code (Kemler): 80
- UN-Number: 3260
- Packaging group: III
- Description of goods: 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (sodium hydrogensulphate)

· Maritime transport IMDG:



- IMDG Class: 8
- UN Number: 3260
- Label: 8
- Packaging group: III
- EMS Number: F-A,S-B
- Marine pollutant: No
- Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (sodium hydrogensulphate)

· Air transport ICAO-TI and IATA-DGR:



- ICAO/IATA Class: 8
- UN/ID Number: 3260
- Label: 8
- Packaging group: III
- Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (sodium hydrogensulphate)
- TDG Class: 8

15 Regulations

· Sara

· Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

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· Section 313 (Specific toxic chemical listings):	
	None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):	
10043-35-3	boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight
121-57-3	sulphanilic acid

· Proposition 65	
· Chemicals known to cause cancer:	
	None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity:	
	None of the ingredients is listed.

· Canadian Ingredient Disclosure List	
· Limit 0,1%	
	None of the ingredients is listed.

· Limit 1%	
10043-35-3	boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight

· Other Regulations	
· EPA (Environmental Protection Agency)	
	None of the ingredients is listed.

· IARC (International Agency for Research on Cancer)	
	None of the ingredients is listed.

· NTP (National Toxicology Program)	
	None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)	
	None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)	
	None of the ingredients is listed.

· Product related hazard informations:	
	The product has been classified and marked in accordance with directives on hazardous materials.

· Hazard symbols:	
	Xi Irritant

· Hazard-determining components of labelling:	
	sulphanilic acid

· Risk phrases:	
	Risk of serious damage to eyes.
	May cause sensitization by skin contact.

· Safety phrases:	
	Keep out of the reach of children.
	Avoid contact with skin and eyes.
	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	Wear suitable gloves and eye/face protection.
	If swallowed, seek medical advice immediately and show this container or label.
	Dispose of this material and its container at hazardous or special waste collection point

· Water hazard class: Water hazard class 1 (Self-assessment):	slightly hazardous for water.
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· CPR Classification: Class E	
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· MSDS Discloses Information Elements Required by the CPR .	
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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Contact:** Thermo Electron Corporation, EID, Water Analysis, Quality Assurance
- * **Data compared to the previous version altered.**

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