

# 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 1
- **Product Use:** Reagent
- **Part of Orion:** AC2007
- **MSDS p/n:** 233250-001 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:**
- **CAS No. Description**  
12125-02-9 ammonium chloride < 99%
- **Identification number(s)**
- **EINECS Number:** 235-186-4
- **EU Number:** 017-014-00-8
- **Additional information:** The remaining 1% contains no hazardous ingredients according to OSHA definition.

## 3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment:**  
Harmful if swallowed.  
Irritating to eyes.
- **NFPA ratings (scale 0 - 4)**  
Health = 2  
Fire = 0  
Reactivity = 0

## 4 First aid measures

- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**  
Drink copious amounts of water, induce vomiting.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **The following symptoms may occur:**  
After inhalation:  
Breathing difficulty

(Contd. on page 2)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/02/2004

Reviewed on 02/02/2004

**Trade name: Nitrate HR 1**

(Contd. of page 1)

Coughing  
Mucous membrane irritation  
After swallowing:  
Headache  
Nausea  
Vomiting

## 5 Fire fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, 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:**  
Nitrogen oxides (NO<sub>x</sub>)  
Hydrogen chloride (HCl)
- **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:** Avoid formation of dust.
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:** Dispose contaminated material as waste according to item 13.

## 7 Handling and storage

- **Handling:**
- **Information for safe handling:** Prevent formation of dust.
- **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:**  
Keep receptacle tightly sealed.  
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:**

**12125-02-9 ammonium chloride (90-100%)**

NIOSH REL	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
ACGIH TLV	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

(Contd. on page 3)

# Material Safety Data Sheet

## acc. to ISO/DIS 11014

Printing date 02/02/2004

Reviewed on 02/02/2004

Trade name: Nitrate HR 1

(Contd. of page 2)

- **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Protection of hands:**  
Only use chemical-protective gloves with CE-labelling of category III.  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Use gloves of stable material (e.g. Nitrile) - if necessary tricoted to improve the wearability.  
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.
- **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

· <b>Odor Threshold:</b>	Not applicable.
· <b>Form:</b>	Tablets
· <b>Color:</b>	Grey
· <b>Odor:</b>	Odorless
· <b>Melting point/Melting range:</b>	340°C (644°F)
· <b>Boiling point/Boiling range:</b>	Undetermined.
· <b>Freezing Point:</b>	Not applicable.
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Product is not flammable.
· <b>Upper Flammable Limit:</b>	Not applicable.
· <b>Lower Flammable Limit:</b>	Not applicable.
· <b>Ignition temperature:</b>	Undetermined.
· <b>Sensitivity to Mechanical Impact:</b>	None
· <b>Sensitivity to Static Discharge:</b>	None
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Vapor Pressure at 30°C (86°F):</b>	<1.3 hPa (<1 mm Hg)
· <b>Vapor Density:</b>	Not applicable.
· <b>Specific Gravity:</b>	Not applicable.
· <b>Density at 20°C (68°F):</b>	1.53 g/cm <sup>3</sup>
· <b>Bulk density at 20°C (68°F):</b>	500 kg/m <sup>3</sup>
· <b>Solubility in / Miscibility with Water at 20°C (68°F):</b>	374 g/l
· <b>Coefficient of Water / Oil Distribution:</b>	Not applicable.
· <b>pH-value (10 g/l) at 20°C (68°F):</b>	7.3
· <b>Organic solvents:</b>	0.0 %
· <b>Solids content:</b>	100.0 %

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**  
halogen compounds  
nitrates
- **Dangerous reactions** No dangerous reactions known.

(Contd. on page 4)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/02/2004

Reviewed on 02/02/2004

Trade name: Nitrate HR 1

(Contd. of page 3)

· **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:**

12125-02-9 ammonium chloride

Oral | LD50 | 1440 mg/kg (rat)

· **Primary irritant effect:**· **on the skin:** No irritant effect.· **on the eye:** Irritating effect.· **Sensitization:** No sensitizing effects known.· **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:**· **Acquatic toxicity:**

12125-02-9 ammonium chloride

LC50 | 725 mg/l/96h (Lepomis macrochirus)

· **General notes:**

Water hazard class 1 (Assessment by list): 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.

## 14 Transport information

· **DOT regulations:**· **Hazard class:** None· **Land transport ADR/RID (cross-border):**· **ADR/RID class:** None· **Maritime transport IMDG:**· **IMDG Class:** None· **Marine pollutant:** No· **Air transport ICAO-TI and IATA-DGR:**· **ICAO/IATA Class:** None· **Propper shipping name:** None

(Contd. on page 5)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/02/2004

Reviewed on 02/02/2004

Trade name: Nitrate HR 1

(Contd. of page 4)

· **TDG Class:** None· **Transport/Additional information:** Not dangerous according to the above specifications.

## 15 Regulations

· **Sara**· **Section 355 (Extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

12125-02-9 | ammonium chloride

· **Proposition 65**· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity:**

Substance is not listed.

· **Canadian Ingredient Disclosure List**· **Limit 0,1%**

Substance is not listed.

· **Limit 1%**

12125-02-9 | ammonium chloride

· **Other Regulations**· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**

Xn Harmful

· **Risk phrases:**

Harmful if swallowed.

Irritating to eyes.

· **Safety phrases:**

Keep out of the reach of children.

Keep away from food, drink and animal feedingstuffs.

Do not breathe dust.

Avoid contact with eyes.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

(Contd. on page 6)

**Material Safety Data Sheet**  
**acc. to ISO/DIS 11014**

Printing date 02/02/2004

Reviewed on 02/02/2004

**Trade name: Nitrate HR 1**

(Contd. of page 5)

*Wear suitable protective clothing.*

- **Water hazard class:** *Water hazard class 1 (Assessment by list): slightly hazardous for water.*
- **CPR Classification:** *Class D, Div. 2*
- **MSDS Discloses Information Elements Required by the CPR .**

**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.**

USA