

# 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:** Aluminium No.2
- **Product Use:** Reagent
- **Part of Orion:** AC2027
- **MSDS p/n:** 233235-001 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

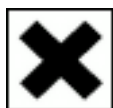
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

CAS No.	Description		
CAS: 100-97-0 EINECS: 202-905-8	methenamine	Xn, F; R 11-42/43	25-30%
CAS: 497-19-8 EINECS: 207-838-8	sodium carbonate	Xi; R 36	20-25%

- **Additional information:**  
For the wording of the listed risk phrases refer to section 16.  
The remaining 45% contains no hazardous ingredients according to OSHA definition.

## 3 Hazards identification

- **Hazard description:**



Xn Harmful

- **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.  
Irritating to eyes.  
May cause sensitization by inhalation and 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 = 1  
Fire = 1  
Reactivity = 0

## 4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.

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*In case of unconsciousness remove to fresh air, apply artificial respiration, and consult a physician.*

· **After skin contact:**

*Immediately rinse with water.*

*Seek medical treatment.*

· **After eye contact:**

*Rinse opened eye for several minutes under running water.*

*Call a doctor immediately.*

· **After swallowing:**

*Drink copious amounts of water, induce vomiting.*

*Seek medical treatment.*

· **The following symptoms may occur:**

*After inhalation:*

*Coughing*

*After swallowing:*

*Vomiting*

*Nausea*

*Diarrhoea*

· **Danger**

*risk of airways sensitization*

*risk of skin sensitization*

### 5 Fire fighting measures

· **Suitable extinguishing agents:** *Use fire fighting measures that suit the environment.*

· **Special hazards caused by the material, its products of combustion or resulting gases:**

*Formation of toxic gases is possible during heating or in case of fire.*

*Hydrogen cyanide (HCN)*

*Nitrogen oxides*

*Ammonia*

· **Protective equipment:** *Wear self-contained respiratory protective device.*

· **Additional information**

*Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.*

*Collect contaminated fire fighting water separately. It must not enter the sewage system.*

### 6 Accidental release measures

· **Person-related safety precautions:**

*Wear protective equipment. Keep unprotected persons away.*

*Use respiratory protective device against the effects of fumes/dust/aerosol.*

· **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.*

*Work only in fume cabinet.*

· **Information about protection against explosions and fires:**

*Keep ignition sources away - Do not smoke.*

*Protect from heat.*

· **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.*

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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:**  
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.
- **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. 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

- |  |                              |
|--|------------------------------|
| · <b>Odor Threshold:</b>                   | Not applicable.              |
| · <b>Form:</b>                             | Tablets                      |
| · <b>Color:</b>                            | Grey                         |
| · <b>Odor:</b>                             | Odorless                     |
| · <b>Melting point/Melting range:</b>      | Undetermined.                |
| · <b>Boiling point/Boiling range:</b>      | 1600°C (2912°F)              |
| · <b>Freezing Point:</b>                   | Not applicable.              |
| · <b>Flash point:</b>                      | > 100°C (> 212°F)            |
| · <b>Flammability (solid, gaseous):</b>    |                              |
| · <b>Upper Flammable Limit:</b>            | Not applicable.              |
| · <b>Lower Flammable Limit:</b>            | Not applicable.              |
| · <b>Ignition temperature:</b>             | 390.0°C (734°F)              |
| · <b>Sensitivity to Mechanical Impact:</b> | None                         |
| · <b>Sensitivity to Static Discharge:</b>  | None                         |
| · <b>Auto igniting:</b>                    | Product is not selfigniting. |

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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Vapor Pressure:</b>	Not applicable.
· <b>Vapor Density:</b>	Not applicable.
· <b>Specific Gravity:</b>	Not applicable.
· <b>Density:</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Soluble.
· <b>Coefficient of Water / Oil Distribution:</b>	Not applicable.
· <b>pH-value (10.4 g/l) at 20°C (68°F):</b>	9.7
· <b>Solvent content:</b>	
<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:**
  - oxidizing agents
  - acids
  - peroxides
  - halogenated hydrocarbons
- **Dangerous reactions:** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

- **Acute toxicity:**

· <b>LD/LC50 values that are relevant for classification:</b>		
<b>144-55-8 sodium hydrogencarbonate</b>		
Oral	LD50	4220 mg/kg (rat)
	LDLo	500 mg/kg (human)
<b>100-97-0 methenamine</b>		
Oral	LD50	569 mg/kg (mouse)
	LD50	9200 mg/kg (rat) intravenous
<b>497-19-8 sodium carbonate</b>		
Oral	LD50	4090 mg/kg (rat)

- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:**
  - Sensitization possible through inhalation.
  - Sensitization possible through skin contact.
- **Additional toxicological information:**
  - The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
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.

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· Synergistic Products: None

## 12 Ecological information

· Behavior in environmental systems:

**100-97-0 methenamine**

log P(o/w) -2.84 (.)

· Ecotoxicological effects:

· Aquatic toxicity:

**144-55-8 sodium hydrogencarbonate**EC50 2350 mg/l/48h (*Daphnia magna*)LC50 7550 mg/l/96h (*Gambusia affinis*)8250 mg/l/96h (*Lepomis macrochirus*)**100-97-0 methenamine**EC50 36 mg/l/48h (*Daphnia magna*)LC50 49.8 mg/l/96h (*Pimephales promelas*)

Toxicity EC10 5 g/l (fish)

Toxicity ECo 10 g/l/48h (*Daphnia magna*)**497-19-8 sodium carbonate**EC50 265 mg/l/48h (*Daphnia magna*)

· 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.

## 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

· Proper shipping name: None

· TDG Class: None

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· **Transport/Additional information:** Not dangerous according to the above specifications.

## 15 Regulations

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

144-55-8 | sodium hydrogencarbonate

100-97-0 | methenamine

497-19-8 | sodium carbonate

3564-18-9 | trisodium hydrogen 3,3'-(3H-2,1-benzoxathiol-3-ylidene)bis[6-oxido-5-methylbenzoate S,S-dioxide

· **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%**

100-97-0 | methenamine

· **Limit 1%**

497-19-8 | sodium carbonate

· **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:**

Xn Harmful

· **Hazard-determining components of labelling:**

methenamine

· **Risk phrases:**

Irritating to eyes.

May cause sensitization by inhalation and skin contact.

· **Safety phrases:**

Keep out of the reach of children.

Do not breathe dust.

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*Avoid contact with skin and eyes.*

*Wear suitable gloves.*

*In case of accident or if you feel unwell, seek medical advice immediately.*

*Dispose of this material and its container at hazardous or special waste collection point*

*In case of accident by inhalation: remove casualty to fresh air and keep at rest*

- **Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.*
- **CPR Classification:** *None*
- **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—