

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/04/2004

Reviewed on 02/04/2004

1 Identification of substance

- **Product details**
- **Trade name:** Copper / Zinc LR
- **Product Use:** Reagent
- **Part of Orion:** AC2065
- **MSDS p/n:** 233271-001 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 not applicable
- **Additional information:** The 100% contains no hazardous ingredients according to OSHA definition.

3 Hazards identification

- **Hazard description:** Not applicable.
- **Information pertaining to particular dangers for man and environment:** Not applicable.
- **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 = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately rinse with water.
Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:**
Drink copious amounts of water, induce vomiting.
If symptoms persist consult doctor.
- **The following symptoms may occur:**
After swallowing:
Nausea
Vomiting

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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:**
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
- **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.
- **Measures for environmental protection:** Do not allow product to reach sewage system or any water course.
- **Measures for cleaning/collecting:** Pick up mechanically.
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:**
No special measures required.
The product is not flammable.
- **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:**

1330-43-4 disodium tetraborate, anhydrous (2.5-5%)

ACGIH TLV | 1 mg/m³

NIOSH REL | 1 mg/m³

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Suitable respiratory protective device recommended.
- **Protection of hands:** Preventive skin protection by use of skin-protecting agents is recommended.
- **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:** Safety glasses
- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Odor Threshold:** Not applicable.

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· Form:	Tablets
· Color:	Violet
· Odor:	Odorless
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	1500°C (2732°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:	Not applicable.
· Vapor Density:	Not applicable.
· Specific Gravity:	Not applicable.
· Density:	Not determined.
· Solubility in / Miscibility with Water:	Soluble.
· Coefficient of Water / Oil Distribution:	Not applicable.
· pH-value (14 g/l) at 20°C (68°F):	8.8
· Solvent content:	
Organic solvents:	0.0 %
· Solids content:	100.0 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
strong heating
No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:		
7447-40-7 potassium chloride		
Oral	LD50	2600 mg/kg (rat)
1330-43-4 disodium tetraborate, anhydrous		
Oral	LD50	709 mg/kg (human) (Decahydr.) 2660 mg/kg (rat) (Decahydr.)
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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· Primary irritant effect:

· on the skin: No irritant effect.

· on the eye: No irritating effect.

· Sensitization: No sensitizing effects known.

· Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· 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)

· 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

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

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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):

7447-40-7 potassium chloride

1330-43-4 disodium tetraborate, anhydrous

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

· 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%

1330-43-4 disodium tetraborate, anhydrous

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:

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations according to directives on hazardous materials.

· 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.