

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/03/2004



Reviewed on 02/03/2004

1 Identification of substance

- **Product details**
- **Trade name:** Copper No.2
- **Product Use:** Reagent
- **Part of Orion:** AC2029
- **MSDS p/n:** 233242-001 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	Hazard	Concentration
CAS: 65208-41-5 EINECS: 249-881-5	calcium thioglycollate trihydrate	 T; R 25-36/37/38-43	2.5-5%
CAS: 124-04-9 EINECS: 204-673-3	adipic acid	 Xi; R 36	≤ 2.5%

- **Additional information:**
For the wording of the listed risk phrases refer to section 16.
The remaining 92.5% 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.
Harmful if swallowed.
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

- **General information:**
Immediately remove any clothing soiled by the product.

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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 and to be sure call for a doctor.

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

· **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.

Call a doctor immediately.

· **After swallowing:**

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

Induce vomiting, if person is conscious. Seek medical help.

· **The following symptoms may occur:**

After inhalation:

Irritations

Coughing

Breathing difficulty

After swallowing:

Mucous membrane irritation

· **Danger** risk of skin sensitization

* 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.

Sulfur oxides (SO_x)

· **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:** 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:** 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.

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· Components with limit values that require monitoring at the workplace:	
124-04-9 adipic acid ($\leq 2.5\%$)	
ACGIH TLV	5 mg/m ³

· **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.

· **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.

· **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:** Not required.

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

9 Physical and chemical properties

· Odor Threshold:	Not applicable.
· Form:	Tablets
· Color:	White
· Odor:	Strong
· 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:	Not determined.
· Solubility in / Miscibility with	
Water:	Soluble.
· Coefficient of Water / Oil Distribution:	Not applicable.
· pH-value (9.1 g/l) at 20°C (68°F):	5.7

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· Solvent content:	
Organic solvents:	0.0 %
· Solids content:	
	100.0 %

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided: strong heating
- 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:

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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65208-41-5 calcium thioglycollate trihydrate

Oral	LD50	352 mg/kg (rat)
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124-04-9 adipic acid

Oral	LD50	5700 mg/kg (rat)
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· Primary irritant effect:

- on the skin: No irritant effect.
- on the eye: No irritating effect.
- Sensitization: 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.
- 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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124-04-9 adipic acid

EC50	86 mg/l/48h (Daphnia magna)
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LC50	511 mg/l/48h (Leuciscus idus)
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	97 mg/l/96h (Pimephales promelas)
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· Additional ecological information:

· BSB5-value:

124-04-9 adipic acid

BSB5	0.598 g/g (-)
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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.

Smaller quantities can be disposed of with household waste.

· **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

· **TDG Class:** None

· **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):**

10043-35-3	boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight
124-04-9	adipic 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.

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· **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
124-04-9	adipic acid

· **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:**

calcium thioglycollate trihydrate

· **Risk phrases:**

Harmful if swallowed.

May cause sensitization by skin contact.

· **Safety phrases:**

Keep out of the reach of children.

Keep away from food, drink and animal feedingstuffs.

Avoid contact with skin.

Wear suitable gloves.

If swallowed, seek medical advice immediately and show this container or label.

Not recommended for interior use on large surface areas.

· **Water hazard class:** Water hazard class 1 (Self-assessment): 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.**