

**Copper(II) nitrate hemi(pentahydrate)****12837-2.5KG**

Version 1.1

Revision Date 12/07/2021

Print Date 05/11/2023

**SECTION 1. IDENTIFICATION**

Product name : Copper(II) nitrate hemi(pentahydrate)

Number : 000000021160

Product Use Description : Laboratory chemicals

Manufacturer or supplier's details : Honeywell International Inc.  
1953 South Harvey Street  
Muskegon, MI 49442

For more information call : 1-800-368-0050  
+1-231-726-3171(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**  
: **Transportation (CHEMTREC): 1-800-424-9300 or**  
: **+1-703-527-3887**  
:  
: (24 hours/day, 7 days/week)

**SECTION 2. HAZARDS IDENTIFICATION****Emergency Overview**

Form : solid

Color : blue green

Odor : odourless

**Classification of the substance or mixture**

Classification of the substance or mixture : Oxidizing solids, Category 1  
Corrosive to metals, Category 1  
Acute toxicity, Category 4, Oral  
Skin corrosion, Category 1B  
Serious eye damage, Category 1

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**GHS Label elements, including precautionary statements**

Symbol(s)

:



Signal word

:

Danger

Hazard statements

:

May cause fire or explosion; strong oxidizer.  
May be corrosive to metals.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.

Precautionary statements

:

**Prevention:**

Keep away from heat.  
Keep/ Store away from clothing/ combustible materials.  
Take any precaution to avoid mixing with combustibles.  
Keep only in original container.  
Do not breathe dust or mist.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Wear fire/ flame resistant/ retardant clothing.

**Response:**

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Immediately call a POISON CENTER/ doctor.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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Absorb spillage to prevent material damage.

**Storage:**

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Formula :  $\text{CuN}_2\text{O}_6 \cdot 2,5\text{H}_2\text{O}$ 

Chemical nature : Substance

| Chemical name                  | CAS-No.    | Concentration |
|--------------------------------|------------|---------------|
| Copper(II) nitrate-2,5-hydrate | 19004-19-4 | 100.00 %      |

**SECTION 4. FIRST AID MEASURES**

General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Call a physician.

Skin contact : After contact with skin, wash immediately with plenty of water. Call a physician.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Protect unharmed eye. Remove contact lenses. Call a physician immediately.

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Ingestion : Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician immediately.

**Notes to physician**

Most important symptoms/effects, acute and delayed : No information available.

Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Water spray  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder

Specific hazards during firefighting : Strong oxidizer. Contact with other material may cause fire. Keep away from reducing agents.  
In fires, the product supports combustion.  
In case of fire hazardous decomposition products may be produced such as:  
Copper oxides  
Nitrogen oxides (NO<sub>x</sub>)

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Wear personal protective equipment. Unprotected persons must be kept away.  
Ensure adequate ventilation.

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- Avoid dust formation.  
Do not breathe dust.  
Do not get in eyes, on skin, or on clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Discharge into the environment must be avoided.  
Do not flush into surface water or sanitary sewer system.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Methods and materials for containment and cleaning up : Use mechanical handling equipment.  
Sweep up and shovel into suitable containers for disposal.  
Do not pick up with the help of saw-dust or other combustible substances.  
Dispose of in accordance with local regulations.

**SECTION 7. HANDLING AND STORAGE****Handling**

- Precautions for safe handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Do not breathe dust.  
Do not get in eyes, on skin, or on clothing.
- Advice on protection against fire and explosion : Keep away from easily oxidizable materials.  
Keep away from combustible material.

**Storage**

- Conditions for safe storage, including any incompatibilities : Store in original container.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Keep away from heat and sources of ignition.  
Do not store near combustible materials.  
Store locked up.
- Advice on common storage : Keep away from reducing agents.  
Do not store with combustible materials.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.  
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.  
Do not breathe dust.  
Do not get in eyes, on skin, or on clothing.
- Engineering measures : Use with local exhaust ventilation.
- Eye protection : Safety goggles
- Hand protection : Impervious gloves  
Gloves must be inspected prior to use.  
Replace when worn.
- Skin and body protection : Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
- Hygiene measures : Keep working clothes separately.  
Separate rooms are required for washing, showering and changing clothes.  
When using, do not eat, drink or smoke.

**Exposure Guidelines**

| Components                     | CAS-No.    | Value                                            | Control parameters    | Update     | Basis                                              |
|--------------------------------|------------|--------------------------------------------------|-----------------------|------------|----------------------------------------------------|
| Copper(II) nitrate-2,5-hydrate | 19004-19-4 | TWA :<br>Time weighted average                   | 0.2 mg/m <sup>3</sup> | 03<br>2014 | ACGIH:US. ACGIH Threshold Limit Values, as amended |
| Further information            | :          | Form of exposure : Fume.<br>Expressed as : as Cu |                       |            |                                                    |

|                                |            |                                                      |                     |            |                                                    |
|--------------------------------|------------|------------------------------------------------------|---------------------|------------|----------------------------------------------------|
| Copper(II) nitrate-2,5-hydrate | 19004-19-4 | TWA :<br>Time weighted average                       | 1 mg/m <sup>3</sup> | 03<br>2014 | ACGIH:US. ACGIH Threshold Limit Values, as amended |
| Further information            | :          | Form of exposure : dust/mist<br>Expressed as : as Cu |                     |            |                                                    |

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|                                |            |                                                      |           |      |                                                                     |
|--------------------------------|------------|------------------------------------------------------|-----------|------|---------------------------------------------------------------------|
|                                |            |                                                      |           |      |                                                                     |
| Copper(II) nitrate-2,5-hydrate | 19004-19-4 | REL :<br>Recommended exposure limit (REL):           | 1 mg/m3   | 2010 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Further information            | :          | Form of exposure : dust/mist<br>Expressed as : as Cu |           |      |                                                                     |
| Copper(II) nitrate-2,5-hydrate | 19004-19-4 | REL :<br>Recommended exposure limit (REL):           | 0.1 mg/m3 | 2016 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Further information            | :          | Form of exposure : Fume.<br>Expressed as : as Cu     |           |      |                                                                     |

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                               |                                 |
|-------------------------------|---------------------------------|
| Physical state                | : solid                         |
| Color                         | : blue green                    |
| Odor                          | : odourless                     |
| Odor threshold                | : Note: No data available       |
| pH                            | : 3.5 - 4.5 at 50.00 g/l, 20 °C |
| Melting point (decomposition) | : 114 °C                        |
| Boiling point/boiling range   | : Note: No data available       |
| Flash point                   | : Note: Not applicable          |

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|                                           |                                                                            |
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| Evaporation rate                          | : Note: No data available                                                  |
| Flammability                              | : The product is not flammable.                                            |
| Lower explosion limit                     | : Note: Not applicable                                                     |
| Upper explosion limit                     | : Note: Not applicable                                                     |
| Vapor pressure                            | : Note: No data available                                                  |
| Vapor density                             | : Note: No data available                                                  |
| Density                                   | : ca. 2.320 g/cm <sup>3</sup> at 20 °C                                     |
| Water solubility                          | : 1,219 g/l at 20 °C                                                       |
| Partition coefficient:<br>n-octanol/water | : Note: No data available                                                  |
| Ignition temperature                      | : Note: Not applicable                                                     |
| Auto-ignition temperature                 | : Note: not auto-flammable                                                 |
| Viscosity, dynamic                        | : Note: Not applicable                                                     |
| Viscosity, kinematic                      | : Note: Not applicable                                                     |
| Oxidizing properties                      | : The substance or mixture is classified as oxidizing with the category 1. |
| Molecular weight                          | : 232.59 g/mol                                                             |

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Bulk density : ca. 1,600 kg/m<sup>3</sup>

Corrosivity : Note: Corrosive to metals

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Strong oxidizer. Contact with other material may cause fire.  
Corrosive in contact with metals

Conditions to avoid : Protect from atmospheric moisture and water.  
To avoid thermal decomposition, do not overheat.  
Keep away from combustible material.

Incompatible materials : Potassium Ferrocyanide  
Tin  
Reducing agents  
Combustible material  
As oxidising agent, attacks organic substances such as wood, paper, fats.

Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:  
Copper oxides  
Nitrogen oxides (NO<sub>x</sub>)

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity : Note: No data available

Acute inhalation toxicity : Note: No data available

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|                        |                                                                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute dermal toxicity  | : Note: No data available                                                                                                                                                                                                                      |
| Skin irritation        | : Species: reconstructed human epidermis (RhE)<br>Result: Category 1B<br>Classification: Causes severe burns.<br>Method: OECD Test Guideline 431<br>Test substance: Copper(II) nitrate hydrate                                                 |
| Eye irritation         | : Note: Conclusive and supporting classification (Ref: REACH Dossier - ECHA disseminated data)                                                                                                                                                 |
| Sensitisation          | : Maximisation Test<br>Species: Guinea pig<br>Result: non-sensitizing<br>Method: OECD Test Guideline 406                                                                                                                                       |
| Repeated dose toxicity | : Species: Mouse, male and female<br>Application Route: Oral<br>NOAEL (No observed adverse effect level): 1000ppm<br>LOAEL (Lowest observed adverse effect level): 2000ppm<br>Test substance: Copper(II) sulphate-5-hydrate                    |
| Genotoxicity in vitro  | : Test Method: reverse mutation assay<br>Cell type: Salmonella typhimurium<br>Metabolic activation: with and without metabolic activation<br>Result: negative<br>Test substance: Copper(II) sulphate-5-hydrate                                 |
| Genotoxicity in vivo   | : Test Method: Micronucleus test<br>Species: Mouse, male and female<br>Cell type: Micronucleus<br>Application Route: Oral<br>Method: Directive 67/548/EEC, Annex V, B.12.<br>Test substance: Copper(II) sulphate-5-hydrate<br>Result: negative |
| Carcinogenicity        | : Species: not specified<br>Note: Not classified due to data which are conclusive although insufficient for classification.                                                                                                                    |

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Reproductive toxicity : Species: Rat, male and female  
Application Route: Oral  
LOAEL: >1,500 ppm  
LOAEL: 1,500 ppm  
Method: OECD Test Guideline 416  
Note: REACH dossier "read-across"

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity effects**

Toxicity to fish : Note: Conclusive and supporting classification (Ref: REACH Dossier - ECHA disseminated data)

Toxicity to daphnia and other aquatic invertebrates : Note: Conclusive and supporting classification (Ref: REACH Dossier - ECHA disseminated data)

Toxicity to algae : Note: Conclusive and supporting classification (Ref: REACH Dossier - ECHA disseminated data)

**Elimination information (persistence and degradability)**

Biodegradability : Note: The methods for determining biodegradability are not applicable to inorganic substances.

**Further information on ecology**

Additional ecological information : Do not flush into surface water or sanitary sewer system.  
Very toxic to aquatic organisms.  
May cause long-term adverse effects in the aquatic environment.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

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**SECTION 14. TRANSPORT INFORMATION**

**DOT**

|                      |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| UN/ID No.            | : UN 3085                                                                |
| Proper shipping name | : OXIDIZING SOLID, CORROSIVE, N.O.S.<br>(Copper(II) nitrate-2,5-hydrate) |
| Class                | : 5.1                                                                    |
| Packing group        | : I                                                                      |
| Hazard Labels        | : 5.1 (8)                                                                |

**IATA**

|                                          |                                                                          |
|------------------------------------------|--------------------------------------------------------------------------|
| UN/ID No.                                | : UN 3085                                                                |
| Description of the goods                 | : OXIDIZING SOLID, CORROSIVE, N.O.S.<br>(Copper(II) nitrate-2,5-hydrate) |
| Class                                    | : 5.1                                                                    |
| Packaging group                          | : I                                                                      |
| Hazard Labels                            | : 5.1 (8)                                                                |
| Packing instruction (cargo aircraft)     | : 561                                                                    |
| Packing instruction (passenger aircraft) | : 557                                                                    |

**IMDG**

|                                                               |                                                                          |
|---------------------------------------------------------------|--------------------------------------------------------------------------|
| UN/ID No.                                                     | : UN 3085                                                                |
| Description of the goods                                      | : OXIDIZING SOLID, CORROSIVE, N.O.S.<br>(COPPER(II) NITRATE-2,5-HYDRATE) |
| Class                                                         | : 5.1                                                                    |
| Packaging group                                               | : I                                                                      |
| Hazard Labels                                                 | : 5.1 (8)                                                                |
| EmS Number                                                    | : F-A, S-Q                                                               |
| Marine pollutant                                              | : yes                                                                    |
| IMDG Code segregation group 1 – ACIDS,                        |                                                                          |
| IMDG Code segregation group 7 – Heavy metals and their salts, |                                                                          |

**SECTION 15. REGULATORY INFORMATION****Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemicals Act (AIC), as : On the inventory, or in compliance with the inventory

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amended

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI) : On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS) : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC) : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

**National regulatory information**

US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 100 lbs  
: Copper(II) nitrate-2,5-hydrate 19004-19-4

**SARA 302 Components** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components** : The following components are subject to reporting levels established by SARA Title III, Section 313:  
: Copper(II) nitrate-2,5-hydrate 19004-19-4

**SARA 311/312 Hazards** : Reactivity Hazard  
Acute Health Hazard

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**CERCLA Reportable Quantity** : 100 lbs**California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.**Massachusetts RTK** : Copper(II) nitrate-2,5-hydrate 19004-19-4**New Jersey RTK** : Copper(II) nitrate-2,5-hydrate 19004-19-4**Pennsylvania RTK** : Copper(II) nitrate-2,5-hydrate 19004-19-4**SECTION 16. OTHER INFORMATION**

|                 | <b>HMIS III</b> | <b>NFPA</b> |
|-----------------|-----------------|-------------|
| Health hazard   | : 2             | 2           |
| Flammability    | : 0             | 0           |
| Physical Hazard | : 1             |             |
| Instability     | :               | 0           |
| Special hazard  | :               | OX          |

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous

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versions.

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