

SAFETY DATA SHEET



Metalon® CI-005 Copper Inkjet Ink for TCO, ITO, and Glass Substrates

Section 1. Identification

GHS product identifier : Metalon® CI-005 Copper Inkjet Ink for TCO, ITO, and Glass Substrates
Chemical name : Copper Ink
Product code : Not available.
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Inkjet printing on glasses and TCO coated substrates.

Supplier's details : NCC Nano LLC dba NovaCentrix
400 Parker Drive, Suite 1110, Austin, TX 78728
Tel.: 512-491-9500
Fax: 512-491-0002
Email: msds@novacentrix.com
Website: www.novacentrix.com

Emergency telephone number (with hours of operation) : CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBER
N.A. Toll Free: 1-800-255-3924
International: 01-813-248-0585

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 - Flammable liquid and vapor.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements



Section 2. Hazards identification

- Prevention** :
- P280 - Wear protective gloves. Wear eye or face protection.
 - P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 - P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
 - P242 - Use only non-sparking tools.
 - P243 - Take precautionary measures against static discharge.
 - P233 - Keep container tightly closed.
 - P271 - Use only outdoors or in a well-ventilated area.
 - P273 - Avoid release to the environment.
 - P261 - Avoid breathing vapor.
 - P264 - Wash hands thoroughly after handling.
- Response** :
- P391 - Collect spillage.
 - P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
 - P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 - P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P337 + P313 - If eye irritation persists: Get medical attention.
- Storage** :
- P405 - Store locked up.
 - P403 - Store in a well-ventilated place.
 - P235 - Keep cool.
- Disposal** :
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** :
- None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Chemical name** : Copper Ink
- Other means of identification** : Not available.

| Ingredient name | % | CAS number |
|---------------------------|-----------|------------|
| 2-(2-Butoxyethoxy)ethanol | ≥40 - ≤50 | 112-34-5 |
| Copper | ≥22 - ≤28 | 7440-50-8 |
| 1-Methoxy-2-propanol | ≥19 - ≤23 | 107-98-2 |

The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** :
- Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

Section 4. First aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| 2-(2-Butoxyethoxy)ethanol Copper | <p>ACGIH TLV (United States, 3/2018). TWA: 10 ppm 8 hours. Form: Inhalable fraction and vapor</p> <p>ACGIH TLV (United States, 3/2018). TWA: 1 mg/m³, (as Cu) 8 hours. Form: Dust and mist TWA: 0.2 mg/m³ 8 hours. Form: Fertilizer and/or industrial use.</p> <p>NIOSH REL (United States, 10/2016). TWA: 1 mg/m³, (as Cu) 10 hours. Form: Dusts and mists</p> <p>OSHA PEL (United States, 5/2018). TWA: 1 mg/m³ 8 hours. Form: Dusts and mists TWA: 0.1 mg/m³ 8 hours. Form: Fertilizer and/or industrial use.</p> |
| 1-Methoxy-2-propanol | <p>ACGIH TLV (United States, 3/2018). TWA: 50 ppm 8 hours. TWA: 184 mg/m³ 8 hours. STEL: 100 ppm 15 minutes. STEL: 369 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours.</p> |

Section 8. Exposure controls/personal protection

| | |
|----------|---|
| Glycerol | <p>TWA: 360 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 540 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p> |
|----------|---|

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

| | |
|--|--|
| Physical state | : Liquid. [Low viscosity] |
| Color | : Brown to gray. |
| Odor | : Not available. |
| Odor threshold | : Not available. |
| pH | : 5 to 8 |
| Melting point | : Not available. |
| Boiling point | : Not available. |
| Flash point | : Not available. |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Lower and upper explosive (flammable) limits | : Not available. |
| Vapor pressure | : Not available. |
| Vapor density | : Not available. |
| Relative density | : 1.2 to 1.35 |
| Solubility | : Miscible with glycolic solvents. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Dynamic (room temperature): 13 mPa·s (13 cP) |
| Flow time (ISO 2431) | : Not available. |

Section 10. Stability and reactivity

| | |
|------------------------------------|---|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidizing materials. |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---------------------------|--------------------------|---------------|--------------------------|----------|
| 2-(2-Butoxyethoxy)ethanol | LD50 Dermal LD50 Oral | Rabbit Rat | 2700 mg/kg 4500 mg/kg | - - |
| 1-Methoxy-2-propanol | LD50 Dermal LD50 Oral | Rabbit Rat | 13 g/kg 6600 mg/kg | - - |
| Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---------------------------|--|------------------|--------|---------------------------|-------------|
| 2-(2-Butoxyethoxy)ethanol | Eyes - Moderate irritant Eyes - Severe irritant | Rabbit Rabbit | - - | 24 hours 20 mg 20 mg | - - |
| 1-Methoxy-2-propanol | Eyes - Mild irritant Skin - Mild irritant | Rabbit Rabbit | - - | 24 hours 500 mg 500 mg | - - |

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

| Name | Category | Target organs |
|----------------------|------------|------------------|
| 1-Methoxy-2-propanol | Category 3 | Narcotic effects |

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Ingestion.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 11. Toxicological information

- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------------------|-------------------------------------|--|----------|
| 2-(2-Butoxyethoxy)ethanol Copper | Acute LC50 1300000 µg/L Fresh water | Fish - Lepomis macrochirus | 96 hours |
| | Acute EC50 1100 µg/L Fresh water | Aquatic plants - Lemna minor | 4 days |
| | Acute EC50 2.1 µg/L Fresh water | Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling) | 48 hours |
| | Acute IC50 13 µg/L Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 72 hours |
| | Acute IC50 5.4 mg/L Marine water | Aquatic plants - Plantae - Exponential growth phase | 72 hours |
| | Acute LC50 0.072 µg/L Marine water | Crustaceans - Amphipoda - Adult | 48 hours |
| | Acute LC50 7.56 µg/L Marine water | Fish - Periophthalmus waltoni - Adult | 96 hours |
| | Chronic NOEC 2.5 µg/L Marine water | Algae - Nitzschia closterium - Exponential growth phase | 72 hours |
| | Chronic NOEC 7 mg/L Fresh water | Aquatic plants - Ceratophyllum demersum | 3 days |
| | Chronic NOEC 0.02 mg/L Fresh water | Crustaceans - Cambarus bartonii - Mature | 21 days |
| | Chronic NOEC 2 µg/L Fresh water | Daphnia - Daphnia magna | 21 days |
| | Chronic NOEC 0.8 µg/L Fresh water | Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling) | 6 weeks |

Section 12. Ecological information

Persistence and degradability

There is no data available.

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------|--------------------|-----|-----------|
| 2-(2-Butoxyethoxy)ethanol | 1 | - | low |
| 1-Methoxy-2-propanol | <1 | - | low |
| Glycerol | -1.76 | - | low |

Mobility in soil






Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

| | DOT Classification | IMDG | IATA |
|-----------------------------------|--|--|--|
| UN number | UN1210 | UN1210 | UN1210 |
| UN proper shipping name | PRINTING INK, FLAMMABLE | PRINTING INK, FLAMMABLE. Marine pollutant (Copper) | PRINTING INK, FLAMMABLE |
| Transport hazard class(es) | 3   | 3   | 3  |
| Packing group | III | III | III |
| Environmental hazards | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required. |

AERG : 129

DOT-RQ Details : Copper

5000 lbs / 2270 kg

Section 14. Transport information

Additional information

- DOT Classification** : This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a. **Reportable quantity** 17857.1 lbs / 8107.1 kg [1679.7 gal / 6358.5 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: Copper

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 3
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Composition/information on ingredients

| Name | Classification |
|---------------------------|--|
| 2-(2-Butoxyethoxy)ethanol | FLAMMABLE LIQUIDS - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A |
| 1-Methoxy-2-propanol | FLAMMABLE LIQUIDS - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |

SARA 313

Section 15. Regulatory information

| | Product name | CAS number |
|---------------------------------|-------------------------------------|-----------------------|
| Form R - Reporting requirements | 2-(2-Butoxyethoxy)ethanol Copper | 112-34-5 7440-50-8 |
| Supplier notification | 2-(2-Butoxyethoxy)ethanol Copper | 112-34-5 7440-50-8 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: Copper; Glycerol; 1-Methoxy-2-propanol
- New York** : The following components are listed: Copper
- New Jersey** : The following components are listed: 2-(2-Butoxyethoxy)ethanol; Copper; Glycerol; 1-Methoxy-2-propanol
- Pennsylvania** : The following components are listed: Copper; Glycerol; 1-Methoxy-2-propanol
- California Prop. 65**

This product does not require a Safe Harbor warning under California Prop. 65.

Section 16. Other information

Procedure used to derive the classification

| Classification | Justification |
|--|---|
| FLAMMABLE LIQUIDS - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 | Expert judgment Calculation method Calculation method Calculation method Calculation method |

History

- Date of issue mm/dd/yyyy** : 09/15/2019
- Date of previous issue** : Not applicable
- Version** : 1
- Prepared by** : KMK Regulatory Services Inc.
- Key to abbreviations** :
- ATE = Acute Toxicity Estimate
 - BCF = Bioconcentration Factor
 - GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 - IATA = International Air Transport Association
 - IBC = Intermediate Bulk Container
 - IMDG = International Maritime Dangerous Goods
 - LogPow = logarithm of the octanol/water partition coefficient
 - MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 - UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.