

**MATERIAL SAFETY DATA SHEET
COPPER AEROSOL JET INK**

SECTION 1: Identification of the substance / mixture and of the company / undertaking

1.1 Product Identifiers

Product name : COPPER AEROSOL JET INK
Brand : DML DM-CUI
Product codes : DM-CUI-5010

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Dycotec Materials Ltd
Unit 12 Star West,
Westmead Drive, Westlea,
Swindon, Wiltshire SN5 7SW, UK
Telephone : +44 (0) 1788 814025
E-mail address : info@dycotecmaterials.com

1.4 Emergency telephone number

Emergency Phone No. : +44 (0) 7495 248908

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification (EC 1272/2008)

Flammable liquids (Category 2), H225
Eye irritation (Category 2), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Very toxic to aquatic life with long lasting effects, H410

2.2 Label elements

Pictogram



Signal word: Danger

Hazard statements:

H225 Flammable liquid and vapour.
H319 Causes serious eye irritation
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing vapours.
P273 Avoid release to the environment.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403 + P235 Store in a well-ventilated place. Keep cool.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures**Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component / CAS #	EC #	%	Classification
Copper 7440-50-8	231-159-6	40-80	Flam. Sol. 1; H228 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor - Aquatic Acute: 10
Diethylene glycol monoethyl ether 111-90-0	203-919-7	5-80	
Isopropanol 67-63-0	200-661-7	5-80	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336

See Section 16 for full text of H phrases.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****Inhalation**

Remove to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if patient is not breathing. Obtain medical attention immediately.

Ingestion

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. Seek immediate medical advice.

Skin contact

Remove contaminated clothing and shoes without delay. Wear impermeable gloves. Wash immediately with plenty of water. Pay particular attention to skin crevices, nail folds, etc. Do not reuse contaminated clothing without laundering. Do not reuse contaminated leatherware. Seek immediate medical advice.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes. Obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Not applicable

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable

SECTION 5: FIRE-FIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires.

5.2 Special hazards arising from the substance or mixture

Keep containers cool by spraying with water if exposed to fire. Carbon oxides. Copper oxides.

5.3 Advice for firefighters**Protective Equipment:**

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

5.4 Further information

No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Wipe up with inert absorbent material (e.g. cloth, fleece) and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material's flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed. Store in a cool, dry, well ventilated place and keep container tightly closed. Avoid flammable gas mixtures. Take precautionary measures against electrostatic loading - earthing necessary during loading operations.

Storage Temperature: +2 - 8°C

Storage class (TRGS 510): Flammable

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters – Components with workplace control parameters

Component	CAS-No.	Value Form of exposure	Control parameter	Basis
Copper	7440-50-8	TWA	1 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
		STEL	2 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
		TWA	0.2 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
	Remarks	The word 'fume' is often used to include gases and vapours. This is not the case for exposure limits where 'fume' should normally be applied to solid particles generated by chemical reactions or condensed from the gaseous state, usually after volatilisation from melted substances. The generation of fume is often accompanied by a chemical reaction such as oxidation or thermal breakdown. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used		
		TWA (Fumes)	0.2 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
		TWA (Dusts and mists)	1 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
		STEL	2 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
Isopropanol	67-63-0	STEL	500 ppm 1250 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits
		TWA	400 ppm 999 mg/m ³	UK. EH40 WEL – Workplace Exposure Limits

8.2 Exposure Controls

Protective equipment



Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Eye/face protection

Use approved safety glasses with side shields. Eyewear complying with an approved standard should be worn if a risk assessment indicate eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Skin protection

Prevent contamination of skin or clothing when removing protective equipment. Barrier creams may be used in conjunction with the gloves to provide additional skin protection. Wear impermeable gloves and suitable protective clothing.

Hand protection

Use neoprene, nitrile, or rubber gloves to prevent skin contact. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Wear protective gloves made of the following material: Nitrile rubber. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Hygiene measures

Do not smoke in work area. Wash hands thoroughly after handling. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke. Contaminated clothing should be placed in a closed container for disposal of decontamination. Warn cleaning personnel of any hazardous properties of the product.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particlerespirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or GEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Ink
Colour	Brown
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting / freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Water solubility	No data available
Partition coefficient	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.1 Other information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Hygroscopic.

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents, Strong bases, Strong acids.

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide, copper oxides.

In the event of fire - see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:

Component / CAS #	LD/LC50	
Copper 7440-50-8	No data available	
Diethylene glycol monoethyl ether 111-90-0	Oral Dermal	5500 µL/kg (rat) 6000 mL/kg (rat)
Isopropanol 67-63-0	Oral Dermal Inhalation	5045 mg/kg (rat) 12800 mg/kg (rat) 8 h - 16000 ppm (rat)

Skin corrosion/irritation:

May cause irritation.

Serious eye damage/eye irritation:

Causes serious eye irritation.

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)

Reproductive toxicity:

No data available

Specific target organ toxicity – single exposure:

No data available

Specific target organ toxicity – repeated exposure:

No data available

Aspiration hazard:

No data available

Additional Information: RTECS - No data available.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS #	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Copper 7440-50-8	No data available	mortality LOEC - Oncorhynchus mykiss (rainbow trout) - 0.022 mg/l - 96 h	mortality NOEC - Daphnia (water flea) - 0.004 mg/l - 24 h EC50 - Daphnia magna (Water flea) - 0.04 - 0.05 mg/l - 48 h
Diethylene glycol monoethyl ether 111-90-0	No data available	No data available	No data available
Isopropanol 67-63-0	EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h EC50 - Algae - > 1,000.00 mg/l - 24 h	LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h	EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h

Toxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

Toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

The company encourages the recycle and reuse of products and packaging, where possible and permitted.

General Information

When handling waste, the safety precautions applying to handling of the product should be considered. Do not dump into any sewers, on the ground, or into any body of water. Not to be disposed of together with household waste. Any disposal practice must be in compliance with all local and national laws and regulations. Handle and dispose contaminated packages in the same way as the product itself.

Disposal methods

When recycle or reuse is not possible, the company recommends that our products, especially when classified as hazardous, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed. For disposal within the European Community, waste codes according to Directive 2008/98/EC should be assigned by the user based on the application for which the product was used.

Disposal-relevant information

Do not release directly or indirectly to surface water, ground water, soil or public sewage system.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID	IMDG	IATA
1210	1210	1210

14.2 UN proper shipping name

ADR/RID	IMDG	IATA
PRINTING INK, flammable.	PRINTING INK, flammable	PRINTING INK, flammable

14.3 Transport hazard class(es)

ADR/RID	IMDG	IATA
3	3	3

14.4 Packaging group

ADR/RID	IMDG	IATA
II	II	II

14.5 Environmental hazards

ADR/RID	IMDG Marine pollutant	IATA
yes	yes	yes

14.6 Special precautions for user

No data available

SECTION 15: REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

no data available

SECTION 16: OTHER INFORMATION**Revision Date:** 24-Feb-2020**General Information**

The information contained herein is, to the best of our knowledge and belief, accurate. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. Since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable local laws and regulations.

Hazard statements in full

H225	Flammable liquid and vapour.
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.