



# MATERIAL SAFETY DATA SHEET

## UV Curable Over Coat Ink

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

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#### 1.1 Product Identifiers

Product name : UV Curable Insulator Ink  
 Brand : DM-OC-6002-I  
 Product codes : Research Batch \_ This MSDS is for product trials only  
 REACH No. : Not available. Annual tonnage does not require a registration.

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

Identified uses : Scientific research and development, professional use only. Printing Ink

#### 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 Only available during office hours

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### SECTION 2: Hazards Identification

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#### 2.1 Classification of the substance or mixture

Physical hazards : Not classified for physical hazards  
 Health hazards : H302; H312; H314; H317; H319; H355  
 Environmental hazards : H401  
 Physicochemical : Stable. Solidify/Cure under UV radiation / sun light.  
 Fully cured product residues are generally not regarded as hazardous waste

#### 2.2 Label elements

##### Pictogram



Signal word : Danger  
 Hazard statements :  
 H302 – Harmful if swallowed  
 H312 – Harmful in contact with skin  
 H314 – Causes severe skin burns and eye damage  
 H317 – May cause an allergic skin reaction  
 H319 – Causes serious eye irritation  
 H355 – May cause respiratory irritation  
 H401 – Toxic to aquatic life

Precautionary statements :  
 P260 – Do not breathe dust/fume/gas/mist/vapours/spray.  
 P264 – Wash with plenty of water and soap thoroughly after handling  
 P270 – Do not eat, drink or smoke when using this product.  
 P271 – Use only outdoors or in a well-ventilated area.  
 P280 – Wear protective gloves/protective clothing/eye protection/face protection.  
 P301+P330+P331 – IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.  
 Rinse skin with water/shower.  
 P363 – Wash contaminated clothing before reuse.  
 P304+P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P310 – Immediately call a POISON CENTER or doctor/physician.  
 P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P405 – Store locked up.

P272 – Contaminated work clothing should not be allowed out of the workplace

P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 – If eye irritation persists: Get medical advice/attention.

P312 – Call a POISON CENTER or doctor/physician if you feel unwell.

P273 – Avoid release to the environment

P403+P233 – Store in a well-ventilated place. Keep container tightly closed

P501 – Dispose of contents/container to hazardous or special waste collection point

### 2.3 Other hazards

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

1,4-butanediol diacrylate; Synonyms: BDDA		Bal
CAS #: 1070-70-8	EC #: 213-979-6	
Classification	H302 H312 H314 H317	
Oligomer Blended; Synonyms:		<30%
CAS #:	EC #:	
Classification	H317, H319	
Curing Promotor Blended; Synonyms:		<20%
CAS #:	EC #:	
Classification	H317, H401	
Photoinitiator Blended; Synonyms:		<10%
CAS #:	EC #:	
Classification	H317	

The full text for all Hazard Statements are displayed in Section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General information

Remove affected person from source of contamination. Remove contaminated clothing. First aid personnel must be aware of own risk during rescue. Consult a physician. Show this safety data sheet to the doctor in attendance.

#### Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Keep patient warm. Consult a physician.

#### Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with plenty of water. Consult a physician

#### Skin contact

Instantly wash off and rinse thoroughly with soap and plenty of water. Consult a physician

#### Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and or in section 11.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Alcohol-resistant foam. Dry powder.

Unsuitable extinguishing media for safety reasons: water jet

### 5.2 Special hazards arising from the substance or mixture

Harmful vapours. Carbon dioxide

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary

#### 5.4 Further information

No data available

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### SECTION 6: ACCIDENTAL RELEASE MEASURES

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#### 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. Avoid breathing dust. 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.

#### 6.3 Methods and materials for containment and cleaning up

Wipe up with inert absorbent material and disposal of as hazardous waste. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

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### SECTION 7: HANDLING AND STORAGE

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#### 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

Store in cool place. Protect from the effects of lights. Keep container tightly closed in a dry and well-ventilated place. Kept upright to prevent leakage.

#### 7.3 Specific end use(s)

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

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### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### 8.1 Control parameters – Components with workplace control parameters

No occupational exposure limits known.

#### 8.2 Exposure Controls

##### Protective equipment



##### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

##### 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.

##### Hand protection

Handle with gloves. 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.

##### Other skin and body protection

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact

##### 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

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. In confined or poorly ventilated spaces, a supplied air respirator must be worn.

##### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

Appearance	liquid
Colour	Clear. Slightly yellowish
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	~ 1
Water solubility	Partly solvable in water
Partition coefficient	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	See TDS
Explosive properties	No data available
Oxidizing properties	No data available

### 9.1 Other information

No data available

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions. Stable at normal ambient temperatures.

### 10.3 Possibility of hazardous reactions

The product can polymerize if the shelf life or storage temperature are greatly exceeded. Heat develops during polymerization.

Reacts with strong with oxidizing agents.

### 10.4 Conditions to avoid

See section 7 – Handling and storage

### 10.5 Incompatible materials

Strong oxidizing agents, Strong reducing agents, Strong acids. Strong alkalis. Free radical initiators

### 10.6 Hazardous decomposition products

Does not decompose when used and stored as recommended.

Other decomposition products - no data available

In the event of fire - see section 5

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### Acute toxicity:

LD50 rat (oral): > 587 mg/kg

This product has not been tested. The statement has been derived from the properties of the individual components.

### Skin corrosion/irritation:

Causes severe skin burns.

This product has not been tested. The statement has been derived from the properties of the individual components.

### Eye damage/eye irritation:

Causes severe eye damage.

This product has not been tested. The statement has been derived from the properties of the individual components.

### Respiratory or skin sensitization:

May cause an allergic skin reaction.

This product has not been tested. The statement has been derived from the properties of the individual components.

**Germ cell mutagenicity:** No data available

**Carcinogenicity:** No data available

**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

**Signs and Symptoms of Exposure:** No data available

**Additional Information:** No data available.

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## SECTION 12: ECOLOGICAL INFORMATION

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### Ecotoxicity

Do not empty into drains, soil or bodies of water. Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

#### 12.1 Toxicity

no data available

#### 12.2 Persistence and degradability

no data available

#### 12.3 Bioaccumulative potential

no data available

#### 12.4 Mobility in soil

no data available

#### 12.5 Results of PBT and vPvB assessment

no data available

#### 12.6 Other adverse effects

no data available

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

#### 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. Fully cured product residues are generally not regarded as hazardous waste.

#### Disposal methods

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: TRANSPORT INFORMATION

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### 14.1 UN number

ADR/RID	IMDG	IATA
UN 1760	UN 1760	UN 1760

### 14.2 UN proper shipping name

ADR/RID	IMDG	IATA
Corrosive liquids, n.o.s. (1,4-butanediol diacrylate)		

### 14.3 Transport hazard class(es)

ADR/RID	IMDG	IATA
8		

### 14.4 Packaging group

ADR/RID	IMDG	IATA
III		

### 14.5 Environmental hazards

ADR/RID	IMDG Marine pollutant	IATA
yes	yes	yes

### 14.6 Special precautions for user

Read safety instructions, SDS and emergency procedures before handling

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## SECTION 15: REGULATORY INFORMATION

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

**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

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## **SECTION 16: OTHER INFORMATION**

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### **General Information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. 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 finished 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.

This is an experimental product. This safety data sheet is for product trials only!

### **Hazard statements in full**

H302 – Harmful if swallowed  
H312 – Harmful in contact with skin  
H314 – Causes severe skin burns and eye damage  
H317 – May cause an allergic skin reaction  
H319 – Causes serious eye irritation  
H355 – May cause respiratory irritation  
H401 – Toxic to aquatic life