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Leicestershire
LE16 7PS

MATERIAL SAFETY DATA SHEET

MSDS Ref: MSDS0011	EMERGENCY NUMBERS
Valid from: 16-12-96	Tel: +44 1858 461014
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Section 1: PRODUCT IDENTIFICATION

Product Identifier: Hi Def Ink

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Description: A black fatty ester based liquid ink with fatty acid cosolvent.

Component	CAS#	%	OSHA PEL	ACGIH TLV	DFG MAK	Symbol	R-Phrase
Fatty acid	Proprietary	50-60	N.E.*	N.E.	N.E.	None	None
Fatty ester	Proprietary	30-40	N.E.	N.E.	N.E.	None	None
Azine compound	Proprietary	10-20	N.E.	N.E.	N.E.	None	None
Aniline	62-53-3	<0.3	2ppm	2ppm	2ppm	T	R20/21/22, 40 R48/23/24/25

* Not established.

** Note: The azine compound contains a small amount of aniline as an impurity. Aniline is a known carcinogen by EPA, IARC, MAK and N-OISH. The azine compound is not considered a carcinogen.

Section 3: potential health effects. Section 11: available toxicity information. Section 15: regulatory information.

Section 3: HAZARDS IDENTIFICATION

Emergency Overview: Black liquid with mild characteristic odour. Avoid contact with eyes and skin..

NFPA Hazard Ratings: Health: 1 Flammability: 1 Reactivity: 0

Potential Health Affects

Eye Contact: This ink is a mild eye irritant.

Skin Contact: This ink is a mild skin irritant.

Ingestion: This ink is not a serious ingestion hazard, however, ingestion can cause irritation to the mucus membranes.

Inhalation: This ink is not a serious acute hazard however, it is irritating to mucus membranes and the upper respiratory system

Chronic: May lead to convulsions, lung edema, tumors. May cause dermatitis after prolonged and repeated exposure.

Section 4: EMERGENCY AND FIRST AID MEASURES

- Eye Contact:** Immediately flush with copious amounts of water for 15 minutes lifting eyelid to ensure thorough rinsing.
- Skin Contact:** Immediately wash with soap and copious amounts of water. Remove and launder contaminated clothing.
- Ingestion:** If patient is conscious rinse mouth thoroughly and give 2-4 glasses of water and seek medical advice.
- Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. If non-breathing do CPR. Seek medical attention.

In any case of persistent irritation, seek medical advice.

Section 5: FIRE & EXPLOSION HAZARD DATA

- Flashpoint And Method:** >365 F COC estimated
- Flammable Limits:** Not established.
- Autoignition Temperature:** Not established
- Extinguishing Media:** Dry chemical, Carbon dioxide, regular foam.
- Special Fire Fighting Procedures:** Use self-contained breathing equipment to protect a against potential toxic and irritating contaminants that may be present in decomposed products.
- Unusual Fire & Explosion Hazards:** None known
- Hazardous Decomposition Products:** CO, CO₂ & oxides of nitrogen.

Section 6: ACCIDENTAL RELEASE MEASURES

- General:** Wear appropriate respiratory protection and protective clothing.
- Spill:** Contain, collect and store in secure container for approved incineration in compliance with local, regional, and national regulations.

Section 7: HANDLING AND STORAGE

Keep away from children. Store in cool, dry, dark place in tightly closed containers.

Section 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

- Exposure Limits:** None established for ink.
- Engineering Controls(ventilation):** Mechanical exhaust.
- Personal Protection:**
- Eye Protection:** Safety glasses with shields or goggles.
- Skin Protection:** Chemical resistant gloves and protective clothing.
- Respiratory:** Not required under normal operating conditions and with good mechanical exhaust.
- Other:** Need eyewash and safety shower nearby.

Section 9: PHYSICAL & CHEMICAL PROPERTIES

- Appearance:** Black liquid with mild characteristic odour
- Flashpoint And Method:** >365 F COC (Est.)
- Vapor Pressure:** <0.1 (est)
- Specific Gravity:** 0.96
- Solubility:** slight
- pH:** 5.6
- Melting/freezing Point:** < 10°C (est)
- Flammable Limits:** None established.
- Autoignition Temperature:** N.E.
- Evaporation Rate(n-butyl Acetate = 1):** negligible
- Percent Volatiles:** < 90.
- Boiling Point:** >300°F.
- Vapor Density:** 4.6 (est.)
- Viscosity:** 49 cps (@25°C)

Section 10: STABILITY & REACTIVITY**Stability:** stable**Hazardous Polymerization:** Will not occur.**Conditions To Avoid:** Excessive heat or light.**Incompatibility:** Strong oxidizing agents and strong alkalis**Hazardous Thermal****Decomposition Products:** Oxides of carbon and nitrogen.**Section 11: TOXICOLOGICAL INFORMATION****Acute Toxicity:***Fatty ester**Fatty acid**Azine compound*

LD50 (Oral, rat) >16g/kg

LD50 (oral, rat) 74g/kg

LD50 (oral, rat) >5g/kg

LD50 (ivn, rat) 2.4 mg/kg

LD50 (ipr, mus) 282 mg/kg

LD50 (oral, male albino Rat) >21.5 ml/kg

LD50 (ivn, mus) 230 mg/kg

Subchronic Effects:

none known.

Chronic effects/carcinogenicity:

Components Listed As Carcinogens By Regulatory Agencies:

*OSHA: None Listed**IARC: None Listed**NTP: None Listed.***Mutagenicity:** This ink was not tested for mutagenic effects. None of the components are known to cause mutagenic effects.**Reproductive Effects:** This ink has not been tested for reproductive effects. None of the components are known to cause reproductive effects.**Section 12: ECOLOGICAL INFORMATION****Ecotoxicological Information:**

No data available.

Chemical Fate Information:

No data available.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of according to appropriate local, regional and national laws or regulations. Do not reuse "empty containers". Incineration in an approved facility with after burner and scrubber is recommended.

Section 14: TRANSPORT INFORMATION**Ground Transport:** Not regulated**Air Transport:** Not regulated**Ocean Transport:** Not regulated**Section 15: REGULATORY INFORMATION (Not meant to be all inclusive)****UNITED STATES**

This product does not contain any ozone depleting substances (ODS), nor were any ODSs used in the manufacture of this product.

This ink has not been tested for heavy metals covered under the various CONEG laws. However, raw materials used to make the inks do not contain mercury, lead, cadmium or hexavalent chromium and none are added during manufacture.

TSCA [Toxic Substances Control Act]:**SARA [Superfund Amendments and Reauthorization Act] 1986 Title III:**

Section 311 & 312 and 40CFR355: Chemicals present in this product which require emergency planning based on TPQ (Threshold Planning Quantities) and

Quantities): None

Section 313 and 40CFR372: Chemicals present that could require submission of annual reports of release of toxic chemicals: None

State Regulations:

California Proposition 65: Components present in this product known by the state of California to cause birth defects, or other reproductive harm: None

Massachusetts 105CMR670 Right to Know Substance List (MSL):
Components which could require reporting under this statute are: None

CANADA

DSL

WHMIS

HMIRA Registration No. Filing date:

EUROPEAN UNION

EINECS Status: All components are in compliance with European Inventory requirements.

CLASSIFICATION: This product is not considered dangerous based on criteria found in EU Directives 67/548 and 88/379.

Section 16: OTHER INFORMATION

REVISION SUMMARY: Revised format to include Europe and Canada, January, 1996. This SDS is written in compliance with Directive 93/112 EC.

This information and recommendations contained in this document are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to this information.