



Innovative Solutions, Inc.

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: ISIJet HR Black Ink
Commonly used in the following printer(s):
ISIJet 1840

Product Number: 40-00009 Ink - ISIJet HR, Black series part number

Chemical Name: Solvent-based Inkjet Printing Fluid
Chemical Family: Glycol Ether/Polymer/Pigment Blend
CAS Number: Blend

Company Identification

Innovative Solutions, Inc.
111 Eastwood Circle
Owens Cross Roads, AL 35763 USA

In case of exposure, please contact local Poison Control Center
Emergency phone for spills, leaks, fire, exposure or accident call
CHEMTREC: 1-800-424-9300 or 1-703-527-3887
Product information: (256) 725-7750
Revision Date: 10/14/04

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS No.	CONTENTS	EINECS	SYMBOL	RISK No.
N-METHYL-2-PYRROLIDONE	872-50-4	3-7 %	212-828-1	Xi	36/38
2-METHOXY-1-METHYLETHYL ACETATE	108-65-6	5-10 %	203-603-9	Xi	10,36
CYCLOHEXANONE	108-94-1	7-13 %	203-631-1	Xn	10,20
2-(2-ETHOXYETHOXY)ETHYL ACETATE	112-15-2	15-40 %	203-940-1	Xi	36/38
2-BUTOXYETHYL ACETATE	112-07-2	30-60 %	203-933-3	Xn	20/21

3. HAZARDS IDENTIFICATION

Harmful by inhalation and in contact with skin. Irritating to eyes and skin.

Hazardous Materials Identification System (HMIS) Codes:

Health Hazard (Blue): 2
Flammability Hazard (RED): 2
Physical Hazard (Yellow): 0
Personal Protection Equipment: B - eye protection and gloves

4. FIRST AID MEASURES

EYES: Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rinse for at least 15 minutes and get prompt medical attention.

SKIN CONTACT: Remove affected person from source of contamination. Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Get prompt medical attention.

INGESTION: Rinse mouth thoroughly. Drink plenty of water. DO NOT induce vomiting. Get medical attention immediately.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. If respiratory problems, artificial respiration/oxygen. Keep the affected person warm and at rest. Get prompt medical attention.

GENERALITIES: Give nothing by mouth to an unconscious person. If breathing is irregular or has stopped, give artificial respiration. In all cases of doubt or if symptoms persist, seek medical attention and show this sheet to the doctor.

ANTIDOTE: No specific antidote exists. Treat symptomatically.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water spray, fog or mist. Carbon dioxide (CO₂). Powder. Dry chemicals, sand, dolomite etc. Foam.

SPECIAL FIRE FIGHTING PROCEDURES: Use pressurized air masks if substance is involved in a fire. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control.

UNUSUAL FIRE & EXPLOSION HAZARDS: Not available.

CONDITIONS OF FLAMMABILITY: Heat, sparks, or flame. Liquid is a Class III-A combustible.

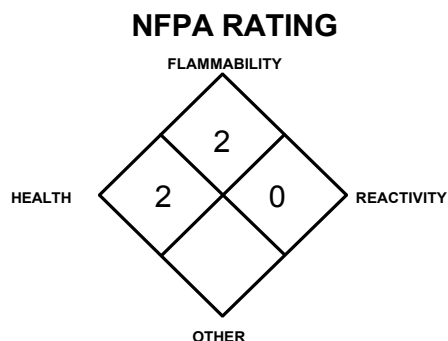
UPPER FLAMMABLE LIMIT: Not available.

LOWER FLAMMABLE LIMIT: Not available.

AUTO-IGNITION TEMPERATURE: Not available.

EXPLOSION DATA - SENSITIVITY TO MECHANICAL IMPACT: Not available.

EXPLOSION DATA - SENSITIVITY TO STATIC DISCHARGE: Not available.



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS DURING SPILL: Avoid contact with skin or eyes. Avoid breathing vapors.

ENVIRONMENTAL PRECAUTIONS: Do not allow to enter drains or effluent systems.

SPILL CLEANUP METHODS: Clean-up personnel should use respiratory and/or liquid contact protection. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Collect and contain spilled material in a chemical absorbent (clay-based material, universal binder, etc.).

7. HANDLING AND STORAGE

HANDLING: Keep away from heat, sparks, ignition sources and open flame. Avoid any contact with skin and eyes. Avoid breathing vapors, ventilate well. Use approved respirator if air contamination is above accepted level. Wear splash goggles and latex or rubber gloves and also a rubber apron when handling large quantities.

STORAGE: Keep containers tightly closed. Store away from traffic and out of reach of children. Store isolated from oxidizing materials.

Storage temperature: Standard room temperature (68 degrees Fahrenheit).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

INGREDIENT NAME	CAS No.	STD LT EXP(8 hrs)	ST EXP(15 min)
2-METHOXY-1-METHYLETHYL ACETATE	108-65-6	OES 274 mg/m3	822 mg/m3
N-METHYL-2-PYRROLIDONE	872-50-4	OES 25 ppm(Sk)	75 ppm(Sk)
CYCLOHEXANONE	108-94-1	OES 10 ppm(Sk)	20 ppm(Sk)
2-BUTOXYETHYL ACETATE	112-07-2	OES Not Available	
2-(2-ETHOXYETHOXY)ETHYL ACETATE	112-15-2	OES Not Available	

OES = Occupational Exposure Standard

PROTECTIVE EQUIPMENT:

PROCESS CONTROL MEASURES: Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station.

VENTILATION: Provide adequate general and local exhaust ventilation.

PROTECTIVE GLOVES: Appropriate protective gloves must be used if there is a risk of direct contact or splash.

EYE PROTECTION: Wear splash-proof eye goggles to prevent any possibility of eye contact. Available emergency eyewash station is recommended.

OTHER PROTECTION: Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapor contact.

WORK/HYGIENIC PRACTICES: Avoid contamination of food, drink, etc. No smoking when handling. Wash at the end of each work shift and before eating. Promptly remove any clothing that becomes wet. Isolate contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

COLOR: Black

ODOR: Characteristic, Fruity, Solvent

ODOR THRESHOLD: Not available.

pH VALUE: Not applicable. Product does not dissociate in water

SOLUBILITY: Soluble in most organic solvents. Not readily soluble in water.

SOLUBILITY VALUE (g/100g H₂O/20°C): <50

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available.

SPECIFIC GRAVITY (Water=1): 0.90 - 0.99 @ 25 °C

VAPOR DENSITY (air=1): >1

VAPOR PRESSURE: <10mmHg @ 25 °C

EVAPORATION RATE: 0.05 - 0.2 (BuAc=1)

VISCOSITY: 6 - 15 cps @ 25 °C

FREEZING POINT: Not available.

BOILING POINT (°C): 140 - 200 @ 760mmHg

FLASH POINT (°C): 63 FLASH POINT METHOD: Closed cup

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: Avoid contact with strong oxidizing agents. Reacts strongly with oxidizers. Upon exposure to air, product may slowly degrade, forming peroxides, which can be unstable.

HAZARDOUS POLYMERIZATION: Not applicable.

HAZARDOUS DECOMPOSITION PRODUCTS: Peroxides.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS, GENERAL: Prolonged and repeated contact with solvents over a long period of time may lead to permanent health problems.

INHALATION: Harmful by inhalation.

SKIN: Harmful in contact with skin.

HEALTH WARNINGS: Narcotic effect. CNS depressant.

TARGET ORGANS: Blood. Central nervous system. Skin.

MEDICAL CONSIDERATIONS: Convulsive disorders, CNS problems. Skin disorders and allergies.

TOXICITY DATA:

Unless otherwise specified:

SENSITIZATION TO PRODUCT: Not available.

CARCINOGENICITY: Not available.

REPRODUCTIVE TOXICITY: Not available.

TERATOGENICITY: Not available.

MUTAGENICITY: Not available.

NAME OF TOXICOLOGICALLY SYNERGISTIC PRODUCTS: Not available.

N-METHYL-2-PYRROLIDONE 872-50-4

LD50 (Rat, Oral) 3914 mg/kg LD50 (Rabbit, Skin) 8000 mg/kg

REPRODUCTIVE TOXICITY: Based upon chronic exposure, the ability to cause defects in developing organisms has been observed.

MUTAGENICITY: Based on chronic exposure, the ability to induce genetic changes in DNA has been observed.

2-METHOXY-1-METHYLETHYL ACETATE

LD50 (Rat) Oral 108-65-6 8532 mg/kg LD50 (Rabbit) Skin >5000 mg/kg

CYCLOHEXANONE

LD50 (Rat) Oral 108-94-1 1620 ul/kg LD50 (Rabbit) Skin 1 ml/kg

CARCINOGENICITY: Based upon chronic exposure, the ability to cause cancer, according to the Registry of Toxic Effects of Chemical Substances (RTECS), has been observed.

REPRODUCTIVE TOXICITY: Based upon chronic exposure, the ability to cause defects in developing organisms has been observed.

TERATOGENICITY: Based upon chronic exposure, the ability to cause tetragenetic effects has been observed.

2-(2-ETHOXYETHOXY)ETHYL ACETATE

LD50 (Rat) Oral 112-15-2 11000 mg/kg LD50 (Rabbit) Skin 15100 mg/kg

2-BUTOXYETHYL ACETATE

LD50 (Rat) Oral 112-07-2 2400 mg/kg LD50 (Rabbit) Skin 1500 mg/kg

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: Little danger to the environment.

13. DISPOSAL CONSIDERATIONS

The advice in this paragraph is of a general nature only. This product must be disposed of via a licensed contractor and shall be disposed of in accordance with federal, provincial, state, and local environmental control regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Do not allow this strongly colored product to enter an effluent system. Dispose of containers as special waste.

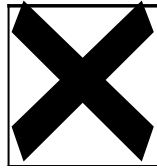
GENERAL/CLEANING: Refer to Section 7 before handling the product or containers. European Waste Catalogue Number (EWC) 08 03 12

14. TRANSPORTATION INFORMATION

GENERAL: Not regulated.

15. REGULATORY INFORMATION

LABEL FOR SUPPLY:



HARMFUL

RISK PHRASES:

R-20/21 Harmful by inhalation and in contact with skin.

R-36/38 Irritating to eyes and skin.

SAFETY PHRASES:

S-24/25 Avoid contact with skin and eyes.

S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S-36/37 Wear suitable protective clothing and gloves.

S-60 This material and its container must be disposed of as hazardous waste.

EC DIRECTIVES: Dangerous Preparations Directive 1999/45 and its amendments.

UK REGULATORY REFERENCES: Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3), S.I. 2002 No. 1689.

16. OTHER INFORMATION

R-PHRASES (Full Text):

R-10 Flammable.

R-20 Harmful by inhalation.

R-36 Irritating to eyes.

R-20/21 Harmful by inhalation and in contact with skin.

R-36/38 Irritating to eyes and skin.

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. The information contained herein is based upon data obtained from the manufacturer and/or recognized technical sources. This information is believed to be correct, but does not purport to be all-inclusive and shall be used only as a guide. Since the condition of handling and use are beyond our control, Innovative Solutions, Inc. assumes no liability for loss or injury resulting from the use of this product or the information herein. All chemicals may present unknown health hazards and should be used with caution. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunto with respect to the information contained herein or the product to which the information refers. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions and/or compliance with federal, provincial, state, and local laws and regulations.