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5. First Aid Measures:

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| Eyes: | Immediately flush eyes with plenty of water for two to three minutes. Remove eye contact lenses (if wearing one) and continue flushing with water for 15 minutes. Get medical attention |
| Skin: | Remove contaminated clothing and immediately wash affected area with plenty of soap and water. Seek medical attention where necessary. Wash contaminated clothing before use. |
| Ingestion: | Contact local medical practitioner or medical help. Do not induce vomiting unless advised by medical practitioner. If vomiting occurs then keep head lower than hips to help prevent aspiration. Get medical attention immediately. |
| Inhalation: | Remove the patient to fresh air (open and airy space), supply oxygen if breathing is difficult. Seek medical attention immediately. |

6. Flammability & Fire Fighting Measures:

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|--|--|---|
| Flash point & Method: | - 4.4 deg. C, 24 deg. F (Closed Cup) |  |
| Flammable limits: | 2.2 to 9 %by volume in air | |
| Auto-ignition temperature | > 426 deg. C, 800 deg. F | |
| General hazards: | Dangerous fire hazards when exposed to heat or flame. Vapour can flow along surfaces to distant ignition sources and flash back. | |
| Extinguishing media: | Carbon Dioxide, Dry Chemical, Foam and Water spray | |
| Hazardous combustion products: | Oxides of carbon and noxious fumes | |
| Explosion hazards: | Above flash point, vapour-to-air-mixtures are explosive if within the flammable limits noted above. Contact with strong oxidisers may cause fire or explosion. | |
| Fire fighting equipment: | Wear full protective equipment and where necessary self content breathing apparatus, with a full face-piece operated in the pressure demand mode. Water spray may be used to keep fire exposed containers cool until they can be evacuated. | |
| Sensitive to static discharge: | Yes. All the moving equipment in contact and pipes etc. must be earthed | |
| Hazardous decomposition products: | Hazardous polymerization shall not occur. | |

7. Accidental Release (spillage / leakage) Measures:

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| General procedure: | Vacate area of spill or leak. Remove all the ignition sources. Wear appropriate personal protective equipment. Contain and recover liquid to the extent possible. Employ non-sparking tools and equipment for the operation. Collect the liquid in an appropriate container or absorb with an inert material like saw dust / dry sand / universal binder / acid binder or cloth stripes (Chindhi) etc. If the leak or spill has ignited, use water spray to disperse any vapour and flush spill away from the personnel or other ignitable material. Whatever is collected from the accidental release – treat as prescribed under "Disposable Material" |
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8. Handling & Storage:

General procedure: Protect containers against physical damage. Store in a cool and dry well ventilated location, away from any area where any kind of fire hazard possibility is acute. Containers should be bonded and grounded (**earthed**) to avoid sparking due to static charge. Do not permit smoking in the storage or working areas. Use only non sparking tools and equipment (electrical switches / motors etc) around the flammable solvent based inks. Empty containers must and waste must be treated as equally hazardous from residual liquid and vapour. Observe all warnings and precautions listed on the container and in the MSDS for the concerned chemical/s.

9. Exposure Control & Personal Protection:

Exposure guidelines: OSHA Hazardous Components (29 CIR 1910.1200) – Exposure Limits

| | <u>TWA</u> | | <u>STEL</u> | |
|----------------------|------------|-------------------------|-------------|-------------------------|
| | <u>ppm</u> | <u>mg/m³</u> | <u>ppm</u> | <u>mg/m³</u> |
| Ethyl alcohol | 1000 | 1900 | -- | -- |
| Ethyl acetate | 400 | 1400 | -- | -- |

Personal Protection Equipment:

Eye & face: Wear safety glasses with side shields or goggles when handling this material
Skin: Wear impervious gloves and appropriate protective clothing as required to minimize contact with skin
Respiratory: A half-face organic vapour respirator maybe worn for protection up to ten or full-face respirator for protection up to fifty times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier. – Whichever is lowest must be followed. For emergencies where the exposure levels are unknown, use a full-face air respirator.





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10. Physical & Chemical Properties:

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| Physical State: | Liquid |
| Odour: | Characteristic odour |
| Vapour Density: | Heavier than air |
| Boiling Point: | Around 78 deg. C or 144 deg. F |
| Freezing Point: | Not determined |
| Melting Point: | Not applicable |
| Solubility in Water: | Insoluble |
| Evaporation Rate: | Faster than Butyl Acetate |
| VOC: | 60 o 80 % by Volume (EPA Method 24) |

11. Stability & reactivity:

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| Condition to avoid: | Heat, open flame or other sources of ignition |
| Stability: | Stable, but may react with strong oxidizing agents, concentrated Nitric or Sulphuric acid and halogens. |
| Polymerization: | Shall not occur |

12. Toxicological Information:

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| Acute Toxicity: | Over exposure to solvents involved may cause fatigue, burning of eyes, confusion, dizziness and drowsiness. Prolonged exposure may cause unconsciousness. |
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13. Ecological Information:

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| Environmental data: | No data can be given due to the insolubility with water. |
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14. Disposal Considerations:

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| Product: | Material that cannot be transferred to recovery or re-cycle should be handled as hazardous waste (solvent recovered) and the extract disposed off at a Govt. Approved waste facility or incinerator (or handed over to waste handling authorised contractor. Always dispose according to the current regulations or the acts of the country of residence. |
| Un-cleaned packing: | Contaminated packing material should be emptied as foe as possible and after appropriate cleaning could be re-used or disposed as per the regulations. |



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15. Transport Information:

Department of Transportation Rules:

Proper Shipping Name: Printing Ink
Technical Name: Solvent Based Liquid Printing Ink
Primary hazard Class /Div. 3
Placards: Flammable
Label: Flammable liquid



16. Regulatory Information:

Highly flammable martial, insoluble in water. Keep away from sources of ignition. Do not breathe vapour. Take precautionary measures against static discharge related sparking.

17. Other Information:

| | | |
|---------------|-------------------|----------|
| NFPA | Health | 1 |
| Codes: | Fire | 2 |
| | Reactivity | 0 |

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| HMS | Health | 1 |
| Codes: | Fire | 2 |
| | Reactivity | 0 |
| | Protection | G |

Additional Information

The OSHA Hazard Communication Standard, 29 CFR 1910.1200, Paragraph (g) (4), specifically permits chemical manufacturers to single MSDS for a category of complex mixtures, where those “**Mixtures**” have similar Hazards and contents. Therefore this MSDS applies to the range of products described in Section 1, or all products with the same product name listed in section 1 (unless described otherwise). Where specific data is required for the purposes of regulatory reporting, a Technical Data Sheet shall be provided for the specific product, on request to us (manufacturer).

Manufacturers Disclaimer:

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of issue and stability of the product for particular use and suitability of the product for specific application/s are beyond our control; al risks of use of this product are therefore assumed by the user. Nothing is intended as a recommendation for uses, which infringe valid Patents or extending Licence under valid Patents. Appropriate warning and safe handling procedures should be provided to all the handlers and users of this material.