

Section 1 - Chemical Product and Company Identification

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| Important information | *** This Materials Safety Data Sheet is only authorized for use by FLUX for FLUX Original products. Any unauthorized use of this Safety Data Sheet is strictly prohibited and may result in legal action being taken by FLUX. *** |
| Sample Name | Ador Black Solvent Ink |
| Model | PC1SVAK |
| Company Name | FLUX Inc. |
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Section 2 - Hazards identification

Classification of the substance or mixture Flammable liquids, Category 2

Label elements

Pictogram:



Signal word: Danger

Hazard statement(s):

H225 Highly flammable liquid and vapour

Precautionary statement(s):

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response:

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

Supplemental Hazard: none

Other hazards no data available

Section 3 - Composition/Information on Ingredients

| Chemical Composition | CAS No. | Weight(%) |
|---------------------------------------|----------|-----------|
| dye | -- | <9 |
| ethyl alcohol | 64-17-5 | <63 |
| propyl alcohol | 71-23-8 | <20 |
| acetone | 67-641 | <2.5 |
| butanol | 71-36-3 | <3.5 |
| Propylene glycol methyl ether acetate | 108-65-6 | <2 |

Section 4 - First-aid Measures

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| Eyes | First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention. |
| Skin | Remove contaminated clothes. Rinse and then wash skin with water and soap. |
| Inhalation | Fresh air, rest. |
| Ingestion | Rinse mouth. Refer for medical attention. |

Section 5 - Fire Fighting Measures

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| Suitable extinguishing media | If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use "alcohol" foam, dry chemical or carbon dioxide. |
| Special hazards arising from the substance or mixture | Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016) FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. (USCG, 1999) This chemical is probably combustible. (NTP, 1992) |
| Advice for firefighters | Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water. |
| Further information | no data available |

Section 6 - Accidental Release Measures

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| Personal precautions, protective equipment and emergency procedures | Remove all ignition sources. Ventilation. Do NOT wash away into sewer. Collect leaking and spilled liquid in covered containers as far as possible. Absorb remaining liquid in inert absorbent. Wash away remainder with plenty of water. Store and dispose of according to local regulations. |
| Environmental precautions | Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water. |
| Methods and materials for containment and cleaning up | Land spill: Apply appropriate foam to diminish vapor and fire hazard. |

Section 7 - Handling And Storage

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| Precautions to be taken in handling and storing | NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. NO contact with incompatible materials: See Chemical Dangers Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam. |
| Conditions for safe storage, including any incompatibilities | Fireproof. Separated from strong oxidants. Keep tightly closed, cool and away from flame. |

Section 8 - Exposure Controls/Personal Protection

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| Appropriate engineering controls | Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area. |
| Ventilation | Not necessary under conditions of normal use. |
| Other Protective Clothing or Equipment | Not necessary under conditions of normal use. |
| Personal Protection | Eye/face protection: Wear safety goggles. Skin protection: Protective clothing. Apron. Protective gloves. Respiratory protection: Use ventilation, local exhaust or breathing protection. Thermal hazards: no data available |

Section 9 - Physical and Chemical Properties

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| Appearance | Solvent-based ink |
| Colour | Black |
| Odor | Alcohol odor |
| Flammability | Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F. |
| Solubility | Miscible with water |
| PH value | Not available. |
| Melting point/ freezing point | -114 °C. Atm. press.:1 atm. |

Section 10 - Stability and Reactivity

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| Chemical Stability | No data available. |
| Conditions to avoid | No data available. |
| Incompatible materials | Many explosions have been experienced during the gravimetric determination of either perchlorates or potassium as potassium perchlorate by a standard method involving ethanol extraction. During subsequent heating, formation and explosion of ethyl perchlorate is very probable. |
| Possibility of hazardous reactions | Flammable liquid when exposed to heat or flame .The vapour mixes well with air, explosive mixtures are easily formed.Acetyl chloride reacts violently with ethanol or water, [Rose, (1961)]. Acetyl bromide reacts violently with alcohols or water, [Merck 11th ed., 1989]. Mixtures of alcohols with concentrated sulfuric acid and strong hydrogen peroxide can cause explosions. Example: An explosion will occur if dimethylbenzylcarbinol is added to 90% hydrogen peroxide then acidified with concentrated sulfuric acid. Mixtures of ethyl alcohol with concentrated hydrogen peroxide form powerful explosives. Mixtures of hydrogen peroxide and 1-phenyl-2-methyl propyl alcohol tend to explode if acidified with 70% sulfuric acid, [Chem. Eng. News 45(43):73(1967); J. Org. Chem. 28:1893(1963)]. Alkyl hypochlorites are violently explosive. They are readily obtained by reacting hypochlorous acid and alcohols either in aqueous solution or mixed aqueous-carbon tetrachloride solutions. Chlorine plus alcohols would similarly yield alkyl hypochlorites. They decompose in the cold and explode on exposure to sunlight or heat. Tertiary hypochlorites are less unstable than secondary or primary hypochlorites, [NFPA 491 M, 1991]. Base-catalysed reactions of isocyanates with alcohols should be carried out in inert solvents. Such reactions in the absence of solvents often occur with explosive violence, [Wischmeyer(1969)]. |
| Hazardous Polymerization | No data available |

Section 11 - Toxicological Information

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| Signs & symptoms | No data available |
| Inhalation | No data available |
| Skin contact | No data available |
| Ingestion | No data available |

Section 12 - Ecological Information

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| Eco-toxicity | Toxicity to fish: LC50 - Pimephales promelas - 14.2 g/L - 96 h. Toxicity to daphnia and other aquatic invertebrates: LC50 - Ceriodaphnia dubia - 5 012 mg/L - 48 h. Toxicity to algae: EC10 - Chlorella vulgaris - 86 mg/L - 4 d. Toxicity to microorganisms: IC50 - activated sludge from domestic and industrial sewage treatment plants - > 1 000 mg/L - 3 h. |
| Bioaccumulation potential | An estimated BCF of 3 was calculated for ethanol(SRC), using a log Kow of -0.31(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC). |
| Environmental fate | No data available |

Section 13 - Disposal considerations

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| Product | The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. |
| Contaminated packaging | Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials. |

Section 14 - Transport Information

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| UN number | ADR/RID: -- IMDG:-- IATA: -- |
| UN proper shipping name | ADR/RID: Not dangerous goods IMDG: Not dangerous goods IATA: Not dangerous goods |
| Transport hazard class(es) | ADR/RID: -- IMDG:-- IATA: -- |

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|-------------------------------------|-------------------------------------|
| Packaging group | ADR/RID: -- IMDG:-- IATA: -- |
| Environmental hazards | ADR/RID: no IMDG :no IATA: no |
| Special precautions for user | No data available |

Section 15 - Regulatory Information

Special requirement be according to the local regulations.

《Dangerous Goods Regulations》

《Recommendations on the Transport of Dangerous Goods Model Regulations》《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods 》

《Occupational Safety and Health Act 》(OSHA)

《Toxic Substance Control Act》(TSCA)

《Consumer Product Safety Act 》(CPSA)

《Federal Environmental Pollution Control Act》(FEPCA)

《The Oil Pollution Act》(OPA)

《Superfund Amendments and Reauthorization Act TitleIII(302/311/312/313) 》(SARA) 《Resource Conservation and Recovery Act》(RCRA)

《Safety Drinking Water Act》(CWA)

《California Proposition 65》

《Code of Federal Regulations》(CFR)

Section 16 - Other Information

Note

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