

Safety Data Sheet

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

1.1 Product identifier

Product name : V7201-D
CAS number : Not applicable.

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

Material uses : Industrial applications: Make-Up fluid for use in a continuous ink jet process.
Replaces solvents lost through evaporation during normal ink drop recycling process.

1.3 Details of the supplier of the safety data sheet

Inkminic logo Technology (Guangzhou) Co., Ltd
Address: No .4 Yichuang Street, Huangpu District, Guangzhou T3- 1601


1.4 Emergency telephone number Medical

China Emergency telephone number: 0086+020-32954560

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification

| | |
|---|--|
|  FLAMMABLE LIQUIDS - Category 2 2) SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A 3) SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 | Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness. |
|---|--|

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 0%.

Ingredients of unknown ecotoxicity : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 0%.

2.2 Label elements

GHS label elements**Danger**

Danger. Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness. [Prevention] Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. [Response] None. [Storage] None. [Disposal] Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : 1) butanone

2.3 Other hazards

Other hazards which do not result in classification : None known.

Additional guidance : Avoid breathing vapor. Wear eye or face protection. IF INHALED: Call a POISON CENTER or physician if you feel unwell. If eye irritation persists: Get medical attention. Keep container tightly closed. Store in a well-ventilated place.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

| Product/ingredient name | CAS # | % | <u>GHS Classification</u> |
|-------------------------|----------|----------|--|
| 1) butanone | 78-93-3 | 70 - <80 | FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| 2) isopropyl acetate | 108-21-4 | 10 - <15 | FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| 3) ethanol | 64-17-5 | 8 - <13 | FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B |

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections

See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|-------------------------|---|
| 1) butanone | GBZ 2.1 (China, 8/2019). PC-TWA: 300 mg/m ³ 8 hours. PC-STEL: 600 mg/m ³ 15 minutes. ACGIH TLV (United States, 1/2021). TWA: 100 ppm 8 hours. STEL: 150 ppm 15 minutes. ACGIH TLV (United States, 1/2021). STEL: 1000 ppm 15 minutes. |
| 2) isopropyl acetate | |
| 3) ethanol | |

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Hand protection** : Recommended: EN374 B, EN374 I, EN374 A
May be used (Short term exposure): Latex gloves. Nitrile gloves. Use gloves only once. Gloves should be replaced regularly and if there is any sign of damage to the glove material. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Recommended: organic vapor filter (Type A)
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Clear.
- Odor** : Not available.
- Odor threshold** : Highest known value: 100 ppm. Weighted average: 21 ppm.
- pH** : Not applicable.

| | |
|---|---|
| Melting point/freezing point | : May start to solidify at the following temperature: -70 °C. Weighted average: -87 °C. |
| Initial boiling point and boiling range | : Lowest known value: 78 °C. Weighted average: 80 °C. |
| Flash point | : -9 °C. |
| Evaporation rate (butyl acetate = 1) | : Highest known value: 7.1. Weighted average: 6.0. |
| Flammability (solid, gas) | : Not applicable. (Liquid) |
| Upper/lower flammability or explosive limits | : Lowest known value: 1.8%. Highest known value: 19.0%. |
| Vapor pressure | : Highest known value: 78 mm Hg at 20°C. Weighted average: 70 mm Hg at 20°C. |
| Vapor density | : >1.6 (Air = 1) |
| Relative density (Water = 1) | : 0.8 |
| Solubility(ies) | : Not available. |
| Partition coefficient: n-octanol/water | : Not applicable. |
| Auto-ignition temperature | : Lowest known value: 404 °C. Weighted average: 417 °C. |
| Decomposition temperature | : Thermally stable. |
| Viscosity | : Not available. |
| Explosive properties | : Not applicable. Not classified. |
| Oxidizing properties | : Not applicable. Not classified. |

9.2 Other information

| | |
|-----------------------------|---------|
| Volatility (w/w) | : 100%. |
| VOC Volatility (w/w) | : 100%. |

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

Reactive or incompatible with the following materials:
oxidizing materials

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-----------------------|---------------|--------------|----------|
| butanone | LC50 Inhalation Vapor | Rat | 23.5 mg/l | 8 hours |
| | LD50 Dermal | Rabbit - Male | >8000 mg/kg | - |
| | LD50 Oral | Rat | 3460 mg/kg | - |
| isopropyl acetate | LC50 Inhalation Vapor | Rat - Female | 50600 mg/m³ | 8 hours |
| | LD50 Dermal | Rabbit | 17.4 g/kg | - |
| | LD50 Oral | Rat - Male | 6750 mg/kg | - |
| ethanol | LC50 Inhalation Vapor | Rat | >117 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | >15800 mg/kg | - |
| | LD50 Oral | Rat | 10470 mg/kg | - |

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|---|---------|-------|----------|-------------|
| ethanol | Skin - Primary dermal irritation index (PDII) | Rabbit | 0 | 4 hours | 14 days |
| | Eyes - Irritant | Rabbit | - | - | 21 days |

Conclusion/Summary

Skin : Not classified. No known significant effects or critical hazards.

Eyes : Causes serious eye irritation.

Respiratory : Not classified. No known significant effects or critical hazards.

Sensitization

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|------------|-----------------|
| butanone | skin | Guinea pig | Not sensitizing |
| ethanol | skin | Mouse | Not sensitizing |
| | Respiratory | Rat | Not sensitizing |

Conclusion/Summary

Skin : Not classified. No known significant effects or critical hazards.

Respiratory : Not classified. No known significant effects or critical hazards.

Mutagenicity

| Product/ingredient name | Test | Experiment | Result |
|-------------------------|----------|--|----------|
| ethanol | OECD 474 | Experiment: In vivo Subject: Mammalian-Animal | Negative |
| | OECD 474 | Experiment: In vivo Subject: Mammalian-Animal | Negative |

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|------------------|
| butanone | Category 3 | - | Narcotic effects |
| isopropyl acetate | Category 3 | - | Narcotic effects |

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|---|----------|-------------------|---------------|
| Not classified. No known significant effects or critical hazards. | | | |

Aspiration hazard

Conclusion/Summary : Not classified. No known significant effects or critical hazards.

Potential chronic health effects, Other

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|------------------------|---------|------------|----------|
| ethanol | Sub-chronic NOAEL Oral | Rat | 1730 mg/kg | 90 days |

Conclusion/Summary : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|------------------------------------|--|-----------|
| butanone | Acute EC50 2029 mg/l Fresh water | Algae - Pseudokirchnerella subcapitata | 96 hours |
| | Acute EC50 308 mg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 2993 mg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic NOEC 1240 mg/l Fresh water | Algae - Pseudokirchnerella subcapitata | 96 hours |
| isopropyl acetate | Acute EC50 >165 mg/l Fresh water | Algae - Scenedesmus quadricauda | 8 days |
| | Acute LC50 110 mg/l Marine water | Crustaceans - Artemia salina | 48 hours |
| | Acute LC50 400 mg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic EC10 >165 mg/l Fresh water | Algae - Scenedesmus quadricauda | 8 days |
| ethanol | Acute EC50 275 mg/l Fresh water | Algae - Chlorella vulgaris | 72 hours |
| | Acute LC50 5012 mg/l Fresh water | Daphnia - Ceriodaphnia dubia | 48 hours |
| | Acute LC50 11200 mg/l Fresh water | Fish - oncorhynchus mykiss | 24 hours |
| | Chronic EC10 11.5 mg/l Fresh water | Algae - Chlorella vulgaris | 72 hours |
| | Chronic NOEC 79 mg/l Marine water | Crustaceans - Palaemonetes pugio | 12 days |
| | Chronic NOEC 9.6 mg/l | Daphnia - daphnia magna | 10 days |
| | Chronic NOEC 250 mg/l Fresh water | Fish - Danio rerio - Embryo | 120 hours |

12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-------------------------|-------------------|------------|------------------|----------|
| Not available. | | | | |
| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability | |
| butanone | - | - | Readily | |
| isopropyl acetate | - | - | Readily | |
| ethanol | - | - | Readily | |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| butanone | 0.3 | - | low |
| isopropyl acetate | 1.3 | - | low |
| ethanol | -0.35 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

| Product/ingredient name | PBT | P | B | T | vPvB | vP | vB |
|---|-----|---|---|---|------|----|----|
| This mixture does not contain any substances that are assessed to be a PBT or a vPvB. | | | | | | | |

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product





Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : None.

SECTION 14: Transport information

| | UN | IMDG | IATA | China |
|---------------------------------|---|---|--|---|
| 14.1 UN number | UN1210 | UN1210 | UN1210 | UN1210 |
| 14.2 UN proper shipping name | Printing Ink Related Material | Printing Ink Related Material | Printing Ink Related Material | Printing Ink Related Material |
| 14.3 Transport hazard class(es) | 3  | 3  | 3  | 3  |
| 14.4 Packing group | II | II | II | II |
| 14.5 Environmental hazards | No. | No. | No. | No. |
| Additional information | - | - | - | - |

14.6 Special precautions for user

No special measures required.

14.7 Transport in bulk according to IMO instruments


Not available.

SECTION 15: Regulatory information


Tariff Code - harmonized system : 3814.00 Organic composite solvents and thinners, not elsewhere specified or included.
USA ...50.90
EU ...90.99

| Chemical Weapons Convention List Schedule I Chemicals | Chemical Weapons Convention List Schedule II Chemicals | Chemical Weapons Convention List Schedule III Chemicals |
|--|---|--|
| Not listed | Not listed | Not listed |

SECTION 16: Other information

| | |
|-----------------------------------|--|
| Revision comments | :  Indicates information that has changed from previously issued version. |
| Abbreviations and acronyms | : ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations |

Procedure used to derive the classification

| Classification | Justification |
|--|---|
|  FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 | On basis of test data Calculation method Calculation method |

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.