Safety Data Sheet

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

1.1 Product identifier

Product name : V473-D

CAS number : Not applicable.

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

Material uses : Industrial applications: Ink for use in a continuous ink jet 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:
+86 020-32954560

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification

1) FLAMMABLE LIQUIDS - Category 2	Highly flammable liquid and vapor.
2) ACUTE TOXICITY (oral) - Category 5	May be harmful if swallowed.
3) ACUTE TOXICITY (dermal) - Category 5	May be harmful in contact with skin.
4) SKIN CORROSION/IRRITATION - Category 1C	Causes severe skin burns and eye damage.
5) SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Causes serious eye damage.
6) SKIN SENSITIZATION - Category 1	May cause an allergic skin reaction.
7) CARCINOGENICITY - Category 2	Suspected of causing cancer.
8) AQUATIC HAZARD (ACUTE) - Category 1	Very toxic to aquatic life.
9) AQUATIC HAZARD (LONG-TERM) - Category 2	Toxic to aquatic life with long lasting effects.

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 13.1%
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 13.1%

Ingredients of unknown ecotoxicity : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 15.3%

2.2 Label elements

GHS label elements

Danger

Danger. Highly flammable liquid and vapor. May be harmful if swallowed or in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing cancer. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. [Prevention] Use personal protective equipment as required. Do not breathe vapor. Wear eye or face protection. Wear protective gloves. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. [Response] IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. [Storage] None. [Disposal] None.

Hazardous ingredients : 1) pentan-2-one
2) Quaternary ammonium compounds, coco alkylethyldimethyl, Et sulfates
3) 4-methylpentan-2-one
4) Rosin, fumarated
5) N,N-diethyl-p-(phenylazo)aniline

2.3 Other hazards

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

Additional guidance : Obtain special instructions before use. Avoid release to the environment. Rinse mouth. Do NOT induce vomiting. IF exposed or concerned: Get medical attention. Take off contaminated clothing and wash before reuse. Collect spillage. Keep container tightly closed.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product/ingredient name	CAS #	%	GHS Classification
1) pentan-2-one	107-87-9	30 - <40	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A AQUATIC HAZARD (ACUTE) - Category 3
2) ethanol	64-17-5	15 - <25	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
3) Quaternary ammonium compounds, coco alkylethyldimethyl, Et sulfates	68308-64-5	5 - <10	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1
4) α,α-bis[4-(diethylamino)phenyl]-4-(ethylamino)naphthalene-1-methanol	1325-86-6	1 - <3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 5
5) 4-methylpentan-2-one	108-10-1	1 - <3	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
6) propyl acetate	109-60-4	1 - <3	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 AQUATIC HAZARD (ACUTE) - Category 3
7) butan-1-ol	71-36-3	1 - <3	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
8) Isopropyl alcohol	67-63-0	1 - <3	FLAMMABLE LIQUIDS - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
9) Rosin, fumarated	65997-04-8	1 - <3	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

10) xylene	1330-20-7	1 - <3	SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 4 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2
11) N,N-diethyl-p-(phenylazo)aniline	2481-94-9	1 - <3	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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 damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes severe burns. May be harmful in contact with skin. May cause an allergic skin reaction.

Ingestion : May be harmful ifswallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, 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. This material is very toxic to aquatic life. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

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. Do not breathe 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. 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) pentan-2-one	**ACGIH TLV (United States, 1/2021).** STEL: 150 ppm 15 minutes.
2) ethanol	**ACGIH TLV (United States, 1/2021).** STEL: 1000 ppm 15 minutes.
3) 4-methylpentan-2-one	**ACGIH TLV (United States, 1/2021).** TWA: 20 ppm 8 hours. STEL: 75 ppm 15 minutes.
4) propyl acetate	**GBZ 2.1 (China, 8/2019).** PC-TWA: 200 mg/m³ 8 hours. PC-STEL: 300 mg/m³ 15 minutes.
5) butan-1-ol	**GBZ 2.1 (China, 8/2019).** PC-TWA: 100 mg/m³ 8 hours.
6) Isopropyl alcohol	**GBZ 2.1 (China, 8/2019).** PC-TWA: 350 mg/m³ 8 hours. PC-STEL: 700 mg/m³ 15 minutes.

7) xylene	**GBZ 2.1 (China, 8/2019).** PC-TWA: 50 mg/m³ 8 hours. PC-STEL: 100 mg/m³ 15 minutes.

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. Contaminated work clothing should not be allowed out of the workplace. 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 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 : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

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 : Black.

Odor : Not available.

Odor threshold : Highest known value: 100 ppm. Weighted average: 41 ppm.

pH : Not applicable.

Melting point/freezing point : May start to solidify at the following temperature: -78 °C. Weighted average: -91 °C.

Initial boiling point and boiling range : 149 °C.

Flash point : 8 °C.

Evaporation rate (butyl acetate = 1) : Highest known value: 2.4. Weighted average: 2.0.

Flammability (solid, gas) : Not applicable. (Liquid)

Upper/lower flammability or explosive limits : Lowest known value: .8%. Highest known value: 19.0%.

Vapor pressure : Highest known value: 42 mm Hg at 20°C. Weighted average: 29 mm Hg at 20°C.

Vapor density	: >1.6 (Air = 1)
Relative density (Water = 1)	: 0.86
Solubility(ies)	: Not available.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Lowest known value: 355 °C. Weighted average: 447 °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)	: 74 %.
VOC Volatility (w/w)	: 74 %.

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
pentan-2-one	LCLo Inhalation Vapor	Rat	>25.5 mg/l	4 hours
	LD50 Dermal	Rabbit	6500 mg/kg	-
	LD50 Oral	Rat	1600 to 3200 mg/kg	-
ethanol	LC50 Inhalation Vapor	Rat	>117 mg/l	4 hours
	LD50 Dermal	Rabbit	>15800 mg/kg	-
	LD50 Oral	Rat	10470 mg/kg	-
Quaternary ammonium compounds, coco alkylethyldimethyl, Et sulfates	LD50 Oral	Rat	641 mg/kg	-
α,α-bis[4-(diethylamino)phenyl]-4-(ethylamino)naphthalene-1-methanol	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	525 mg/kg	-
4-methylpentan-2-one	LC50 Inhalation Vapor	Rat	8.2 to 16.4 mg/l	4 hours
	LD50 Dermal	Rabbit	>16 g/kg	-
	LD50 Oral	Rat	2080 mg/kg	-
propyl acetate	LC50 Inhalation Vapor	Rat	32 mg/l	4 hours
	LD50 Dermal	Rabbit	>17800 mg/kg	-

	LD50 Oral	Rat	8700 mg/kg	-
butan-1-ol	LCLo Inhalation Vapor	Rat	>21.48 mg/l	7 hours
	LD50 Dermal	Rabbit	3430 mg/kg	-
	LD50 Oral	Rat	2292 mg/kg	-
Isopropyl alcohol	LCLo Inhalation Vapor	Rat	>24.6 mg/l	6 hours
	LD50 Dermal	Rabbit	12.9 g/kg	-
	LD50 Oral	Rat	5.84 g/kg	-
Rosin, fumarated	LDLo Dermal	Rat	>2000 mg/kg	-
	LDLo Oral	Rat	>2000 mg/kg	-
xylene	LC50 Inhalation Vapor	Rat	29 mg/l	4 hours
	LD50 Oral	Rat	>3523 mg/kg	-
	LDLo Dermal	Rabbit	4200 mg/kg	-
N,N-diethyl-p-(phenylazo)aniline	LD50 Oral	Rat	800 mg/kg	-

Conclusion/Summary : May be harmful in contact with skin. May be harmful if swallowed.

Acute toxicity estimates

Route	ATE value
Oral	2134.43 mg/kg
Dermal	3219.91 mg/kg
Inhalation (vapors)	237.49 mg/l

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 : Causes severe skin burns and eye damage.

Eyes : Causes severe skin burns and eye damage.

Respiratory : Causes burns.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
ethanol	skin	Mouse	Not sensitizing
	Respiratory	Rat	Not sensitizing

Conclusion/Summary

Skin : May cause an allergic skin reaction.

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 : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

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
4-methylpentan-2-one	Category 3	-	Respiratory tract irritation
propyl acetate	Category 3	-	Narcotic effects
butan-1-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects
Isopropyl alcohol	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 : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
pentan-2-one	Acute EC50 >150 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours
	Acute EC50 >1000 mg/l Fresh water	Daphnia - Daphnia magna	96 hours
	Acute LC50 1240000 µg/l Fresh water	Fish - Pimephales promelas - 32 days - 18.4 mm - 0.095 g	96 hours
	Chronic EC50 73.77 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours
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
4-methylpentan-2-one	Acute LC50 505000 µg/l Fresh water	Fish - Pimephales promelas - 29 days - 21 mm - 0.141 g	96 hours
	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
propyl acetate	Acute EC50 672 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	72 hours
	Acute EC50 91.5 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 60000 µg/l Fresh water	Fish - Pimephales promelas - 30 days - 20.4 mm - 0.148 g	96 hours
butan-1-ol	Acute EC50 225 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	96 hours
	Acute LC50 1730000 µg/l Fresh water	Fish - Pimephales promelas - 33 days - 20.6 mm - 0.119 g	96 hours
	Chronic NOEC 129 mg/l Fresh water	Algae - Pseudokirchnerella subcapitata	96 hours
	Chronic NOEC 4.1 mg/l Fresh water	Daphnia - Daphnia magna	21 days
Isopropyl alcohol	Acute EC50 >1800 mg/l Fresh water	Algae - Scenedesmus quadricauda	7 days
	Acute LC50 9640000 µg/l Fresh water	Fish - Pimephales promelas - 31 days - 20.6 mm - 0.117 g	96 hours
	Chronic LOAEL 1800 mg/l Fresh water	Algae - Scenedesmus quadricauda	7 days
xylene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas - 31 days - 18.4 mm - 0.077 g	96 hours
	Chronic NOEC >1.3 mg/l Fresh water	Fish - Oncorhynchus mykiss	56 days

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available.				

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
pentan-2-one	-	-	Readily
ethanol	-	-	Readily
4-methylpentan-2-one	-	-	Readily
propyl acetate	-	-	Readily
butan-1-ol	-	-	Readily
Isopropyl alcohol	-	-	Readily
Rosin, fumarated	-	-	Not readily
xylene	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
pentan-2-one	0.91	-	low
ethanol	-0.35	-	low
4-methylpentan-2-one	1.9	-	low
propyl acetate	1.4	-	low
butan-1-ol	1	-	low
Isopropyl alcohol	0.05	-	low
Rosin, fumarated	2.7	-	low
xylene	3.12	8.1 to 25.9	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	Printing Ink	Printing Ink	Printing Ink
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes.
Additional information	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The environmentally hazardous substance mark may appear if required by other transportation regulations.	-

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 : 3215.11 Printing ink: Black.
USA ...90.60
EU ...10

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	On basis of test data
ACUTE TOXICITY (oral) - Category 5	Calculation method
ACUTE TOXICITY (dermal) - Category 5	Calculation method
SKIN CORROSION/IRRITATION - Category 1C	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

Notice to reader

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