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Safety Data Sheet (SDS)

Section 1 – CHEMICALS AND COMPANY IDENTIFICATION


Chemical Identifier	Ink-4146K
Product Code	4146K
Reference Number	51
Name of Supplier	Hitachi Industrial Equipment Systems Co.,Ltd.
Address	1-1 Higashitaga-cho 1-chome,Hitachi-shi, Ibaraki-ken, 316-8502 Japan
Department in Charge	IJP ink Group, Marking Systems and Hoist Systems Division
Phone Number	+81-294-36-8682
Fax Number	+81-294-36-8975
Mail Address	aida-kohhei@hitachi-ies.co.jp
Emergency Phone Number	+81-294-36-8682
Recommended Use	Industrial ink jet printers
Restriction on Use	If the product is to be used for applications other than those recommended, seek the judgment of an expert/chemical substance specialist, etc.

Section 2 – HAZARDS IDENTIFICATION

GHS Classification of the Chemical

Physicochemical	Flammable liquids Category 2
Health Hazards	Acute toxicity (Inhalation: vapour) Category 4 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2A Reproductive toxicity Category 2 Specific target organ toxicity (single exposure) Category 3 (narcotic effect, respiratory tract irritation)
	Other hazards than mentioned above are Not classified or Classification not possible.

GHS Label Elements

Pictograms	
Signal Word	Danger
Hazard Statements	H225 Highly flammable liquid and vapour H315 Causes skin irritation H319 Causes serious eye irritation H332 Harmful if inhaled H335 May cause respiratory irritation H336 May cause drowsiness or dizziness H361 Suspected of damaging fertility or the unborn child
Precautionary Statements	
Prevention	Obtain special instructions before use.(P201) Do not handle until all safety precautions have been read and understood.(P202) Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.(P210) Keep container tightly closed.(P233) Ground and bond container and receiving equipment.(P240) Use explosion-proof electrical, ventilating and lighting equipment.(P241)

Response	Use non-sparking tools.(P242)
	Take action to prevent static discharges.(P243)
	Avoid breathing dust/fume/gas/mist/vapours/spray.(P261) Wash hand thoroughly after handling.(P264) Wash eye thoroughly after handling.(P264) Use only outdoors or in a well-ventilated area.(P271)
Storage	Wear protective gloves/protective clothing/eye protection/face protection.(P280) IF ON SKIN: Wash with plenty of soap and water.(P302+P352) IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water or shower.(P303+P361+P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing.(P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.(P305+P351+P338)
	IF exposed or concerned: Get medical advice/attention.(P308+P313) Call a doctor if you feel unwell.(P312) Specific treatment.(P321) If skin irritation occurs: Get medical advice/attention.(P332+P313) If eye irritation persists: Get medical advice/attention.(P337+P313) Take off contaminated clothing and wash it before reuse.(P362+P364) In case of fire: Use appropriate media to extinguish.(P370+P378)
	Store in a well-ventilated place. Keep container tightly closed.(P403+P233) Store in a well-ventilated place. Keep cool.(P403+P235)
Disposal	Store locked up.(P405) Dispose of contents and container in accordance with local, regional and national regulations (to be specified).(P501)

Section 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Distinction of Substance or Mixture

Mixture

Chemical Name or Generic Name	Concentration or Its Ranges (wt%)	Formula	ENCS No./ISHL No.		CAS RN
			ENCS No.	ISHL No.	
Methyl isopropyl ketone	75-less than 85	CH ₃ CH(CH ₃)COCH ₃	(2)-542	Registered	563-80-4
2-Methoxy-1-methylethyl Acetate	1-3	—	(2)-3144	Registered	108-65-6
Chromium and its compounds	5-10	—	Registered(Trade secret)	Registered(Trade secret)	Trade secret

Section 4 – FIRST AID MEASURES

Inhalation

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical advice and attention.

Skin Contact	<p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>If skin irritation occurs: Get medical advice and attention.</p> <p>IF exposed or concerned: Get medical advice and attention.</p> <p>Specific treatment.</p>
Eye Contact	<p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: Get medical advice/attention.</p> <p>IF exposed or concerned: Get medical advice and attention.</p>
Ingestion	<p>Rinse mouth.</p> <p>IF SWALLOWED: Call a doctor if you feel unwell.</p> <p>IF exposed or concerned: Get medical advice and attention.</p>
Section 5 – FIRE FIGHTING MEASURES	
Suitable Extinguishing Media	<p>Use extinguishing agent suitable for type of surrounding fire.</p> <p>When dust occurs, use dry sand.</p>
Unsuitable Extinguishing Media	Cylindric water.
Specific Hazards in Case of Fire	<p>Risk of producing harmful gases such as carbon monoxide. Avoid inhalation of smoke or gases.</p>
Specific Fire Fighting	<p>Fight fire from upwind position if possible</p> <p>Keep away from sources of ignition and use appropriate extinguishing media.</p> <p>Prohibit unauthorized staff from entering the area around the fire.</p> <p>Keep unnecessary people away.</p>
Special Protective Equipment and Precautions for Fire Fighters	<p>Use goggles in combination with dust mask, and another protections as appropriate to situation.</p>
Section 6 – ACCIDENTAL RELEASE MEASURES	
Personal Precautions, Protective Equipment and Emergency Procedures	<p>Use goggles in combination with dust mask, and another protections as appropriate to situation.</p>
Environmental Precautions	<p>Large spills :Evacuate area.</p> <p>Ensure adequate ventilation.</p> <p>Do not discharge into the drains, surface waters or ground water directly.</p>
Methods and Equipment for Containment and Cleaning Up	No information available
Prevention Measures for Secondary Accidents	<p>Keep away from sources of ignition and prepare extinguishing media.</p>
Section 7 – HANDLING AND STORAGE	
Handling	<p>Provide ventilation system and use necessary personal protective equipment as described in "Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION".</p> <p>Ground/bond container and receiving equipment.</p> <p>Use only non-sparking tools.</p> <p>Use explosion-proof electrical/ventilating/lighting.</p> <p>Take precautionary measures against static discharge.</p>
Technical Measures	

As far as we know, the information that is listed here is accurate. However, the above-mentioned suppliers or their subsidiaries shall not be liable for the accuracy or completeness of the information described above.

		Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
	Precautions for Safe Handling	Keep cool. Avoid breathing dust/fume/gas/mist/vapours/spray.
	Prevents Handling of Incompatible Substances or Mixtures	Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Refer to "Section 10 – STABILITY AND REACTIVITY".
Storage	Conditions for Safe Storage	Refer to "Section 10 – STABILITY AND REACTIVITY". Store locked up. Store container tightly closed in well-ventilated place.

Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

	Japan Administration Level	Exposure Limits (Japan Society for Occupational Health)	TLVs (ACGIH)
Methyl isopropyl ketone	Not listed	Not listed	TWA 20 ppm, STEL –
2-Methoxy-1-methylethyl Acetate	Not listed	Not listed	Not listed
Chromium and its compounds	Not listed	0.5mg/m ³ as Cr ³⁺	Not listed

	Concentration standards specified by the Minister of Health, Labour and Welfare	
	Concentration standard value for 8-hours exposure	Concentration standard value for short-term exposure/ceiling
Methyl isopropyl ketone	Not listed	Not listed
2-Methoxy-1-methylethyl Acetate	Not listed	Not listed
Chromium and its compounds	Not listed	Not listed

Engineering Controls		Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Personal Protective Equipment	Respiratory Protection	Use explosion-proof electrical equipment and prevent from static electricity. Select and wear appropriate respiratory protective equipment based on risk assessments and other measures.
	Hand Protection	Select and wear appropriate safety gloves based on risk assessments and other measures.
	Eye/Face Protection	Select and wear appropriate face and eye protection based on risk assessments and other measures.
	Skin and Body Protection	Select and wear appropriate protective clothing and footwear based on risk assessments and other measures.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

As far as we know, the information that is listed here is accurate. However, the above-mentioned suppliers or their subsidiaries shall not be liable for the accuracy or completeness of the information described above.

Physical State	Liquid
Form	Liquid
Colour	Black
Odour	Solvent odor
Melting Point/Freezing Point	-95°C (as Methyl isopropyl ketone)
Boiling Point or Initial Boiling Point and Boiling Ranges	94°C (as Methyl isopropyl ketone)
Flammability	Flammability
Lower and Upper Explosion Limit / Flammability Limit	1.2vol% (as Methyl isopropyl ketone)
	Upper Limit
Flash Point	8vol% (as Methyl isopropyl ketone)
Auto-Ignition Temperature	-1.1°C (Tag Closed Cup)
	475°C(as Methyl isopropyl ketone)
Decomposition Temperature	No data available
pH	No data available
Kinematic Viscosity	3.7mm ² /s
Solubility	water: 6g/L(as Methyl isopropyl ketone)
Partition Coefficient : n-Octanol/Water	0.84 (as Methyl isopropyl ketone)
Vapour Pressure	5.5kPa (20°C) (as Methyl isopropyl ketone)
Density and/or Relative Density	0.86
Relative Gas Density	No data available
Particle Characteristics	No data available
as Methyl isopropyl ketone	
Boiling Point or Initial Boiling Point and Boiling Ranges	95°C
Density and/or Relative Density	0.8046(16°C/4°C)
Section 10 – STABILITY AND REACTIVITY	
Reactivity	Does not react dangerously under normal conditions.
Chemical Stability	Stable under normal conditions of use.
Possibility of Hazardous Reaction	Flammable
Conditions to Avoid	There is a risk of explosion due to impacts, friction, flame and other source of ignition.
Incompatible Substances or Mixtures	No data available
Hazardous Decomposition Products	No data available
Other Data	No data available
Section 11 – TOXICOLOGICAL INFORMATION	
Acute Toxicity	Oral
	Dermal
	Inhalation
	Classification not possible since lots of the concentrations of unknown ingredients.
	Classification not possible since lots of the concentrations of unknown ingredients.
	(gas)
	Does not fall under gas based on GHS definitions.
	(vapour)
	Classified as Category 4 since ATE is 2500 to 20000(ppmV).
	(dust and mist)
	Unable to classify due to insufficient data.

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Skin Corrosion/Irritation	Classified as Category 2 since the sum of Category 2 ingredients is more than 10%.
Serious Eye Damage/Eye Irritation	Classified as Category 2A since the sum of Eye Category 2A + Eye Category 2B ingredients is more than 10%.
Respiratory Sensitization	Unable to classify due to insufficient data.
Skin Sensitization	Classification not possible since lots of the concentrations of unknown ingredients.
Germ Cell Mutagenicity	Classification not possible since lots of the concentrations of unknown ingredients.
Carcinogenicity	Unable to classify due to insufficient data.
Reproductive Toxicity	(Reproductive toxicity) Classified as Category 2 since one of the Category 2 ingredients is more than 3.0%. (Reproductive toxicity, effects on or via lactation)
Specific Target Organ Toxicity (Single Exposure)	Unable to classify due to insufficient data. Classified as Category 3(narcotic effect) since the sum of Category 3(narcotic effect) ingredients is more than 20%. Classified as Category 3(respiratory tract irritation) since the sum of Category 3(respiratory tract irritation) ingredients is more than 20%.
Specific Target Organ Toxicity (Repeated Exposure)	Classification not possible since lots of the concentrations of unknown ingredients.
Aspiration Hazard	Unable to classify due to insufficient data.
Section 12 – ECOLOGICAL INFORMATION	
Hazardous to the Aquatic Environment, Short-Term (Acute)	Classification not possible since lots of the concentrations of unknown ingredients.
Hazardous to the Aquatic Environment, Long-Term (Chronic)	Classification not possible since lots of the concentrations of unknown ingredients.
Ecotoxicity	No data available
Persistence	No data available
Bioaccumulative Potential	No data available
Mobility in Soil	No data available
Hazardous to the Ozone Layer	Unable to classify due to insufficient data.
Section 13 – DISPOSAL CONSIDERATIONS	
Residual waste	<p>Because waste materials such as liquid waste, paper towels used to wipe it up, or empty containers are flammable combustible materials, the section on “specially controlled industrial waste(Flammable waste oil)” from the Waste Management and Public Cleaning Law (Waste Management Law) is applicable.</p> <p>Either appropriately process in accordance with Waste Management and Public Cleaning Law, or commission a contractor licensed for transport or disposal of industrial waste requiring special management.</p> <p>Do not let wastewater, etc. used for cleaning machinery or containers flow directly onto the ground or into the culverts.</p> <p>For waste materials generated by wastewater treatment, incineration, etc. either carry out processing in accordance with the Waste Management and Public Cleaning Law and related laws and regulations, or commission a licensed vendor to do so.</p>

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When incinerating of waste materials, etc., do not use an incinerator without cleaning equipment, as harmful gas will be generated.

Clarify the contents of waste materials and entrust disposal to a waste disposal company.
Empty containers should be treated as industrial wastes and not allowed to contain waste.

Contaminated
containers and
packaging

Section 14 – TRANSPORT INFORMATION

International Regulations

Regulatory Information by Sea Conform to the provisions of IMO.

UN No. 1210
Proper Shipping Name PRINTING INK RELATED MATERIAL
Class 3
Packing Group II
Marine Pollutant Not applicable
Liquid Substance Not applicable
Transported in Bulk
According to
MARPOL 73/78,
Annex II, the IBC
Code

Regulations in Japan

Regulatory Information by Air Conform to the provisions of ICAO/IATA.

UN No. 1210
Proper Shipping Name PRINTING INK RELATED MATERIAL
Class 3
Packing Group II

Regulatory Information by Road Complies with the Fire Service Act.

Regulatory Information by Sea Conform to the provisions of the Ship Safety Law.

UN No. 1210
Proper Shipping Name PRINTING INK RELATED MATERIAL
Class 3
Packing Group II
Marine Pollutant Not applicable
Liquid Substance Not applicable
Transported in Bulk
According to
MARPOL 73/78,
Annex II, the IBC
Code

Regulatory Information by Air Conform to the provisions of the Civil Aeronautics Law.

UN No. 1210
Proper Shipping Name PRINTING INK RELATED MATERIAL
Class 3
Packing Group II

Emergency Response Guide
Number

130

Section 15 – REGULATORY INFORMATION

Industrial Safety and Health Act

the standards for work environment monitoring Article 65 part 2-1

Dangerous or Harmful Substances Subject to Be Indicated their
Names, etc.
(Article 57 part 1 ,Order Article 18 part 1 and 2, Attached Table9)

Dangerous or Harmful Substances Subject to Be Indicated their
Names, etc.
(Article 57 part 1 ,Order Article 18 part 1 and 2, Attached Table9)

	<p>Dangerous Substances –Flammable substances(Order Article Appended Table 1 part 4)</p> <p>Hazardous Substances to be notified in terms of Whose Names,etc .(Article 57 part 2 ,Order Article 18 part 2-1and part 2, Attached Table9)</p> <p>Chromium and its compounds (excluding chromic acid and chromate and dichromate and dichromate) (Number: 142) (1%–10%) (Trade Secrets)</p> <p>Hazardous Substances to be notified in terms of Whose Names,etc .(Article 57 part 2 ,Order Article 18 part 2-1and part 2, Attached Table9)</p> <p>Methyl propyl ketone(Number:590) (80%–90%) (Trade Secrets)</p>
Industrial Safety and Health Act(after 2024/4/1)	<p>Dangerous or Harmful Substances Subject to Be Indicated their Names, etc. (Article 57 part 1 ,Order Article 18 part 1 and 2, Attached Table9)</p> <p>Hazardous Substances to be notified in terms of Whose Names,etc .(Article 57 part 2 ,Order Article 18 part 2-1and part 2, Attached Table9)</p> <p>Chromium and its compounds (excluding hexavalent chromium compounds)(Number:142) (1%–10%) (Trade Secrets)</p>
Substances subject to obligation such as labeling and SDS issuance based on the Industrial Safety and Health Act (scheduled to come into effect on April 1, Reiwa 8)	<p>Dangerous goods and hazardous goods for which the name, etc. should be indicated (Article 57, Paragraph 1 of the Act, Article 18, Item 2 ~ Item 3 of the Enforcement Order, Appended Table 2 of Article 30 of the Safety and Health Regulations)</p> <p>Dangerous goods and hazardous goods whose names, etc. should be notified (Article 57-2, Paragraph 1 of the Act, Article 18-2, Item 2 ~ Item 3 of the Enforcement Order, Article 34-2 Appended Table 2 of the Safety and Health Regulations)</p> <p>2-Methoxy-1-methylethyl Acetate (Number:610) (less than 5%) (Trade Secrets)</p> <p>Organic Solvent Poisoning Prevention Regulations Article 1-2 (Class 2 Organic Solvents, etc.), Enforcement Ordinance Appendix 6-2 Not applicable</p>
Poisonous and Deleterious Substances Control Act	Not applicable
Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof	Not applicable
Act on the Regulation of Manufacture and Evaluation of Chemical Substances	Priority Assessment Chemical Substances(Article 2 part 5)
Fire Service Act	Hazardous Materials Category IV inflammable liquids Class I petroleum non water-soluble Packing Group II
Water Pollution Prevention Act	Specified substances (article 2, paragraph 4 of the Act, article 3 of the Enforcement Ordinance)
Foreign Exchange and Foreign Trade Act	Import Trade Control Order Appended Table I part 16
Ship Safety Law	Flammable liquids(Order Article 3,Appended Table I)
Aviation Law	Flammable liquids(Order Article 194,Appended Table I)

Section 16 – OTHER INFORMATION

As far as we know, the information that is listed here is accurate. However, the above-mentioned suppliers or their subsidiaries shall not be liable for the accuracy or completeness of the information described above.

Industrial Safety and Health Act	<p>Second-class organic solvents, etc. contain more than 5% of Second-class organic solvents.</p> <p>In the "15. Applicable laws" column, the materials for which label and SDS will be mandated are also listed. (Substance without a decree number.) Reiwa based on 0111 No. 1 from the Kankohatsu, on January 11, 2022.)</p> <p>In the case where "composition and ingredient information" corresponds to the secret of the business, the description of the content is the conventional range display. However, it is possible to notify us separately by the method of information transmission agreed with the customer, such as a confidentiality agreement. For more information, please contact our sales representative.</p> <p>3-methyl-2-butanone and Methyl isopropyl ketone are the same substances. Methyl isopropyl ketone belongs to Methyl propyl ketone.</p>
Act on the Regulation of Manufacture and Evaluation of Chemical Substances	<p>We have a Priority Assessment Chemical Substance posting threshold of 0.1% or more.</p> <p>The posting of a Priority Assessment Chemical Substance in SDS is as of November 2019 as an effort.</p>
Foreign Exchange and Foreign Trade Act	In law, printing inks are not approved for export
Fire Service Act	The flash point of Class I petroleum is less than 21 ° c.
Poisonous and Deleterious Substances Control Act	The deleterious substances is only applicable to the material, and the mixture is non-applicable.
RoHS Specified Substance Concentration	<p>Substances treated as equipment are exempt from this law.</p> <p>Cd<100ppm Pb, Hg, Cr(VI), PBB, PBDE, DEHP, DBP, BBP, DIBP <1000ppm</p>
Allowable concentration Standards	TLV-TWA: Threshold Limit Values-Time Weighted Average STEL (Short Term Exposure Limit)
Cited Literature	<p>JIS Z7253:2019</p> <p>1) International Chemical Safety Cards</p> <p>2) National Institute of Technology and Evaluation (NITE), Japan</p> <p>3) Site for Safe Workplace by Ministry of Health, Labour and Welfare, Japan</p> <p>4) EZSDS(JCDB)</p>
Additional Information about This Product:	<p>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.</p>