Issue 2020.11.24 Revision 2024.09.13

Safety Data Sheet (SDS)

Section 1 - CHEMICALS AND COMPANY IDENTIFICATION

Chemical Identifier Ink-4144K
Product Code 4144K
Reference Number 60

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
Acute toxicity (Inhalation: dust and mist) Category 4

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2B

Reproductive toxicity Category 2

Specific target organ toxicity (single exposure)
Category 2(systemic toxicity, central nervous system)

Specific target organ toxicity (single exposure)
Category 3(narcotic effect, respiratory tract irritation)

Specific target organ toxicity (repeated exposure) Category 2(spleen, liver, blood, respiratory apparatus, visual organ, central nervous system, hearing organ)

Other hazards than mentioned above are Not classified or Classification not possible.

GHS Label Elements

Pictograms



Signal Word Hazard Statements Danger

d Statements H225 Highly flammable liquid and vapour H315+H320 Causes skin and 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

H371 May cause damage to systemic toxicity, central

nervous system

H373 May cause damage to spleen, liver, blood, respiratory apparatus, visual organ, central nervous system, hearing organ through prolonged or repeated exposure

Precautionary Statements

Prevention

Response

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)

Use non-sparking tools.(P242)

Take action to prevent static discharges.(P243)

Do not breathe

dust/fume/gas/mist/vapours/spray.(P260)

Avoid breathing

dust/fume/gas/mist/vapours/spray.(P261) Wash hand thoroughly after handling.(P264) Wash eye thoroughly after handling.(P264)

Do not eat, drink or smoke when using this

product.(P270)

Use only outdoors or in a well-ventilated area.(P271)

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: Call a doctor.(P308+P311)

IF exposed or concerned: Get medical advice/attention.(P308+P313)

Call a doctor if you feel unwell.(P312)

Get medical advice and attention if you feel

unwell.(P314)

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)

Storage Store in a well-ventilated place. Keep container tightly

closed.(P403+P233)

Store in a well-ventilated place. Keep cool.(P403+P235)

Store locked up.(P405)

Disposal 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	Concentration or Its	Formula	ENCS No./ISHL No.		CAS RN
Name	Ranges (wt%)		ENCS No.	ISHL No.	
Chromium and its	3-5	-	Registered(Registered(Trade secret
compounds			Trade	Trade	
			secret)	secret)	
Nitrocellulose	3-5	_	(8)-176	Registered	9004-70-0
Isopropyl alcohol	1-3	CH3CH(OH)CH3	(2)-207	Registered	67-63-0
Methyl isopropyl ketone	75-less than 85	CH3CH(CH 3)COCH3	(2)-542	Registered	563-80-4
1-Butanol	0.1-1	CH3CH2CH 2CH2OH	(2)-3049	Registered	71-36-3

Section 4 - FIRST AID MEASURES

IF INHALED: Remove to fresh air and keep at rest in a Inhalation

position comfortable for breathing.

IF exposed or concerned: Call a doctor.

Skin Contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice and

attention.

Specific treatment.

IF exposed or concerned: Call a doctor.

Eye Contact IF IN EYES: Rinse cautiously with water for several

minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Call a doctor.

Ingestion Rinse mouth.

IF SWALLOWED: Call a doctor if you feel unwell.

IF exposed or concerned: Call a doctor.

Section 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Use extinguishing agent suitable for type of surrounding Media

When dust occurs, use dry sand.

Unsuitable Extinguishing Cylindric water.

Media

Special Protective

for Fire Fighters

Equipment and Precautions

Specific Hazards in Case of Risk of producing harmful gases such as carbon Fire

monoxide. Avoid inhalation of smoke or gases. Specific Fire Fighting Fight fire from upwind position if possible

Keep away from sources of ignition and use appropriate

extinguishing media.

Prohibit unauthorized staff from entering the area

around the fire.

Keep unnecessary people away.

Use goggles in combination with dust mask, and another

protections as appropriate to situation.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and **Emergency Procedures**

Use goggles in combination with dust mask, and another protections as appropriate to situation.

Large spills :Evacuate area. Ensure adequate ventilation.

Environmental Precautions Do not discharge into the drains, surface waters or

ground water directly.

Methods and Equipment for small spill; absorb with material such as non-Containment and Cleaning combustible materialwash thoroughly after handling

Large spills: Dike spills and dispose of in safe area. Prevention Measures for Keep away from sources of ignition and prepare Secondary Accidents

extinguishing media.

Risk of slipping. Spilled material forms slippery floor.

Do not recklessly walk on the spillage.

Section 7 - HANDLING AND STORAGE

Handling **Technical Measures** Provide ventilation system and use necessary personal protective equipment as described in "Section 8 -EXPOSURE CONTROLS / PERSONAL PROTECTION".

Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting.

Take precautionary measures against static discharge.

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.

Do not breathe dust/fume/gas/mist/vapours/spray.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye

protection/face protection.

Prevents Handling of

Refer to "Section 10 - STABILITY AND REACTIVITY".

Incompatible Substances or Mixtures

Refer to "Section 10 - STABILITY AND REACTIVITY".

Conditions for Safe

Storage

Store locked up.

Store container tightly closed in well-ventilated place.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Storage

	Japan Administration Level	Exposure Limits (Japan Society for Occupational Health)	TLVs (ACGIH)
Chromium and its compounds	Not listed	0.5mg/m3 as Cr3+	Not listed
Nitrocellulose	Not listed	Not listed	Not listed
Isopropyl alcohol	200ppm	[Maximum allowable concentration] 400ppm (980mg/m3)	TWA 200 ppm, STEL 400 ppm
Methyl isopropyl ketone	Not listed	Not listed	TWA 20 ppm, STEL -

1-Butanol	25ppm	_	[Maximum allowable concentration:] 50ppm (150mg/m3) (skin)			
		(150mg/m3				
	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			
Chromium and its compounds	Not listed		Not listed			
Nitrocellulose	Not listed		Not listed			
Isopropyl alcohol	Not listed		Not listed			
Methyl isopropyl ketone	Not listed		Not listed			
1-Butanol	Not listed	Not listed				
		fume or mist. Facilities storing or utilizing this mate equipped with an eyewash facility an Use explosion-proof electrical equipper from static electrocity.		sh facility and a safety shower.		
Personal Protective Equipment	Respiratory Protection	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.				
tion 9 - PHYSICAL AND C Physical State Form Colour Odour	HEMICAL PROPERTIES	Liquid Liquid Black Solvent odd	or.			

Melting Point/Freezing -95°C (as Methyl isopropyl ketone)

Point

Boiling Point or Initial 94°C (as Methyl isopropyl ketone)

Boiling Point and Boiling

Ranges

Flammability Flammability

Lower and Upper Explosion Lower Limit 1.2vol% (as Methyl isopropyl ketone)

Limit / Flammability Limit

Upper Limit 8 vol% (as Methyl isopropyl ketone)

Flash Point 0°C (Tag Closed Cup)

Auto-Ignition Temperature 475°C(as Methyl isopropyl ketone)

No data available Decomposition

Temperature

рΗ No data available Kinematic Viscosity 3.5 mm 2/s

Solubility water: 6g/L(as Methyl isopropyl ketone) Partition Coefficient : n-0.84 (as Methyl isopropyl ketone)

Octanol/Water

Vapour Pressure 5.5kPa (20°C) (as Methyl isopropyl ketone)

Density and/or Relative

Density

Relative Gas Density

Particle Characteristics

No data available

No data available

as Isopropyl alcohol

Boiling Point or Initial

 $\label{eq:Boiling Point and Boiling} \mbox{Boiling Point and Boiling}$

Ranges

Density and/or Relative 0.7863(20°C, 20°C)

Density

as Methyl isopropyl ketone

Boiling Point or Initial 95°C

Boiling Point and Boiling

Ranges

Density and/or Relative 0.8046(16°C/4°C)

Density

as 1-Butanol

Boiling Point or Initial 117.7°C

Boiling Point and Boiling

Ranges

Density and/or Relative 0.81337(15°C, 4°C), 0.80978(20°C, 4°C)

Density

Section 10 - STABILITY AND REACTIVITY

Reactivity Does not react dangerously under nomal conditions.

0.85

82.4°C

Chemical Stability Stable under normal conditions of use.

Possibility of Hazardous Flammable

Reaction

Conditions to Avoid There is a risk of explosion due to impacts, friction, flame and other

source of ignition.

Incompatible Substances or No data available

Mixtures

Hazardous Decomposition No data available

Products

Other Data No data available

Section 11 - TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation

Acute Toxicity Oral Classified as Not classified since ATE is over more than

2000(mg/kg).

Dermal Classified as Not classified since ATE is over more than

2000(mg/kg).

Inhalation (gas)

Does not fall under gas based on GHS definitions.

(vapour)

Classified as Category 4 since ATE is 2500 to

(dust and mist)

Classified as Category 4 since ATE is 1.5mg/l.
Classified as Category 2 since the sum of Category 2

ingredients is more than 10%.

Serious Eye Damage/Eye

Classified as Category 2B since the sum of Eye
Category 2B ingredients is more than 10%.

Respiratory Sensitization Classified as Not classified since ingredients that has a

hazard category are contained less than the

concentration limit.

Skin Sensitization Classified as Not classified since ingredients that has a

hazard category are contained less than the

concentration limit.

Germ Cell Mutagenicity Classified as Not classified since ingredients that has a

hazard category are contained less than the

concentration limit.

Carcinogenicity

Classified as Not classified since ingredients that has a hazard category are contained less than the

concentration limit.

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)

Classified as Not classified since ingredients that has a hazard category are contained less than the

concentration limit.

Specific Target Organ Toxicity (Single Exposure)

Specific Target Organ

Toxicity (Repeated

Exposure)

Classified as Category 2(systemic toxicity) since one of the Category 2(systemic toxicity) ingredients is more

than 10%.

Classified as Category 2(central nervous system) since one of the Category 2(central nervous system)

ingredients is more than 10%.

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%.

Classified as Category 2(spleen) since one of the

Category 2(spleen) ingredients is more than 10%.

Classified as Category 2(liver) since one of the Category 2(liver) ingredients is more than 10%.
Classified as Category 2(blood) since one of the Category 2(blood) ingredients is more than 10%.
Classified as Category 2(respiratory apparatus) since one of the Category 2(respiratory apparatus) ingredients is more than 10%.

Classified as Category 2(visual organ) since one of the Category 2(visual organ) ingredients is more than 10%.

Classified as Category 2(central nervous system) since one of the Category 2(central nervous system) ingredients is more than 10%

Classified as Category 2(hearing organ) since one of the Category 2(hearing organ) ingredients is more than 10%.

Aspiration Hazard

Unable to classify due to insufficient data.

Section 12 - ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment, Short-Term

(Acute)

Hazardous to the Aquatic Environment, Long-Term

(Chronic)
Ecotoxicity
Persistence

Bioaccumulative Potential

Mobility in Soil

Hazardous to the Ozone

Layer

Classification not possible since lots of the concentrations of unknown ingredients.

Classification not possible since lots of the concentrations of unknown ingredients.

No data available No data available No data available

No data available

Unable to classify due to insufficient data.

Section 13 - DISPOSAL CONSIDERATIONS

Residual waste

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.

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.

Do not let wastewater, etc. used for cleaning machinery or containers flow directly onto the groundor in to the culverts. For waste materials generated by wastewater treatment, incineration, etc. either carry out processingin accordance with the Waste Management and Public Cleaning Law and related laws and regulations, or commission a licensed vendor to do so.

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.

Contaminated containers and packaging

Empty containers should be treated as industrial wastes and not allowed to contain waste.

International Regulations

Section 14 - TRANSPORT INFORMATION

Regulatory Conform to the provisions of IMO.

Information by Sea

UN No. 1210

Proper Shipping Name PRINTING INK RELATED MATERIAL

Class 3 Packing Group П

Marine Pollutant Not applicable Liquid Substance Not applicable

Transported in Bulk According to MARPOL 73/78, Annex II, the IBC

Code

Regulatory Conform to the provisions of ICAO/IATA.

Information by Air

UN No. 1210

Proper Shipping Name PRINTING INK RELATED MATERIAL

Class

Packing Group П

Regulations in Japan Regulatory Complies with the Fire Service Act.

Information by Road

Regulatory Conform to the provisions of the Ship Safety Law.

Information by Sea

UN No.

Proper Shipping Name PRINTING INK RELATED MATERIAL

Class 3 Packing Group

Marine Pollutant Not applicable Liquid Substance Not applicable

Transported in Bulk According to MARPOL 73/78, Annex II, the IBC

Code

Conform to the provisions of the Civil Aeronautics Law. Regulatory

Information by Air

UN No. 1210

Proper Shipping Name PRINTING INK RELATED MATERIAL

Class 3
Packing Group II
130

Emergency Response Guide

Number

Section 15 - REGULATORY INFORMATION Industrial Safety and Health

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)

Hazardous and Explosive Products (Enforcement Ordinance Appendix 1 No. 1)

Dangerous Goods and Flammable Objects (Enforcement Ordinance Appendix 1 No. 2)

Dangerous Substances -Flammable substances(Order Article Appended Table 1 part 4)

Hazardous Substances to be notified in terms of Whose Names, etc .(Article 57 part 2, Order Article 18 part 2–1 and part 2, Attached Table9)

Chromium and its compounds (excluding chromic acid and chromate and dichromate and dichromate) (Number: 142) (less than 5%) (Trade Secrets)

Hazardous Substances to be notified in terms of Whose Names, etc .(Article 57 part 2, Order Article 18 part 2–1 and part 2, Attached Table9)

Nitrocellulose (Number: 424) (less than 5%) (Trade Secrets)

1-Butanol(Number: 477) (less than 1%)(Trade Secrets)
Propyl alcohol(Number: 494) (less than 5%)(Trade Secrets)

Methyl propyl ketone (Number: 590) (80%-90%) (Trade Secrets)

Materials for special medical examinations and current handling workers(Industrial Safety and Health Act66 2 and Order for Enforcement of Industrial Safety and Health Act Article 22 (i))

Substances for which concentration reference values are set (Article 577–2, Paragraph 2 of the Safety and Health Regulations, Notification No. 177 of April 27, Reiwa 5, Public Notice No. 24 of April 27, Reiwa 5)

Dangerous or Harmful Substances Subject to Be Indicated their Names, etc.

(Article 57 part 1, Order Article 18 part 1 and 2, Attached Table9)

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)

Chromium and its compounds (excluding hexavalent chromium compounds) (Number: 142) (less than 5%) (Trade Secrets)

Organic Solvent Poisoning Prevention Regulations Article 1-2 (Class 2 Organic Solvents, etc.), Enforcement Ordinance Appendix 6-2 Not applicable

Not applicable

Industrial Safety and Health Act(after 2024/4/1)

Poisonous and Deleterious Substances Control Act

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 Priority Assessment Chemical Substances(Article 2 part 5)

of Chemical Substances

Hazardous Materials Category IV inflammable liquids Class I

petroleums non water-soluble Packing Group II

Water Pollution Prevention Hazardous substances (Article 2, Ordinance of Enforcement, article

2, Ordinance 1) that prescribe wastewater standards)

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 1

Ship Safety Law **Aviation Law**

Fire Service Act

Import Trade Control Order Appended Table I part 16 Flammable liquids(Order Article 3,Appended Table I) Flammable liquids(Order Article 194,Appended Table I)

Section 16 - OTHER INFORMATION

Industrial Safety and Health Act

Second-class organic solvents, etc.contain more than 5% of Secondclass organic solvents.

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 Kiankahatsu, on January 11, 2022.)

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.

Isopropyl alcohol belongs to propyl alcohol.

3-methyl-2-butanone and Methyl isopropyl ketone are the same substances. Methyl isopropyl ketone belongs to Methyl propyl

Act on the Regulation of Manufacture and Evaluation of

We have a Priority Assessment Chemical Substance posting threshold of 0.1% or more.

Chemical Substances

The posting of a Priority Assessment Chemical Substance in SDS is as of November 2019 as an effort.

Foreign Trade Act

Foreign Exchange and In law, printing inks are not approved for export

Fire Service Act Poisonous and Deleterious

The flash point of Class I petroleums is less than 21 $^{\circ}\,$ c. The deleterious substances is only applicable to the material, and

the mixture is non-applicable.

Substances Control

Substances treated as equipment are exempt from this law. Cd<100ppm Pb, Hg, Cr(VI), PBB, PBDE, DEHP, DBP, BBP, DIBP

RoHS Specified Substance Concentration

TLV-TWA: Threshold Limit Values-Time Weighted Average STEL

Allowable concentration (Short Term Exposure Limit

<1000ppm

Standards JIS Z7253:2019

Cited Literature 1) International Chemical Safety Cards

2) National Institute of Technology and Evaluation (NITE), Japan

3) Site for Safe Workplace by Ministry of Health, Labour and Welfare, Japan 4) EZSDS (JCDB)

about This Product:

Additional Information 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.