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Revision 2025.11.13

## Safety Data Sheet (SDS)

### Section 1 – CHEMICALS AND COMPANY IDENTIFICATION

Chemical Identifier	Ink-1145T
Product Code	1145T
Reference Number	62
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	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 (oral) Category 4 Acute toxicity (Inhalation: vapour) Category 4 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 1 Germ cell mutagenicity Category 2 Carcinogenicity Category 2 Reproductive toxicity Category 1B Specific target organ toxicity (single exposure) Category 1 (optic organs, systemic toxicity, central nervous system) Specific target organ toxicity (single exposure) Category 2 (kidney) Specific target organ toxicity (single exposure) Category 3 (narcotic effects, respiratory tract irritation)  Specific target organ toxicity (repeated exposure) Category 1 (optic organs, nervous system, central nervous system)
Environmental Hazards	Hazardous to the aquatic environment, short-term (acute) Category 3  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 H302+H332 Harmful if swallowed or if inhaled H315 Causes skin irritation H318 Causes serious eye damage H335 May cause respiratory irritation H336 May cause drowsiness or dizziness H341 Suspected of causing genetic defects

	H351 Suspected of causing cancer H360 May damage fertility or the unborn child H370 Causes damage to optic organs, systemic toxicity, central nervous system H371 May cause damage to kidney H372 Causes damage to optic organs, nervous system, central nervous system through prolonged or repeated exposure H402 Harmful to aquatic life
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) 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 hands 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)  Avoid release to the environment.(P273) Wear protective gloves/protective clothing/eye protection/face protection.(P280)
Response	IF SWALLOWED: Call a doctor if you feel unwell.(P301+P312) 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) Immediately call a doctor.(P310) Call a doctor if you feel unwell.(P312) Get medical advice and attention if you feel unwell.(P314) Specific treatment.(P321) Rinse mouth.(P330) If skin irritation occurs: Get medical advice/attention.(P332+P313) Take off contaminated clothing and wash it before reuse.(P362+P364)



Personal Precautions, Protective Equipment and Emergency Procedures Use goggles in combination with dust mask, and another protections as appropriate to situation.

Environmental Precautions Large spills :Evacuate area.  
Ensure adequate ventilation.  
Do not discharge into the drains, surface waters or ground water directly.

Methods and Equipment for Containment and Cleaning Up No information available

Prevention Measures for Secondary Accidents Keep away from sources of ignition and prepare extinguishing media.

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.  
Refer to “Section 10 – STABILITY AND REACTIVITY”.

Prevents Handling of Incompatible Substances or Mixtures 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 ethyl ketone	200ppm	200ppm(590mg/m3)	TWA 200 ppm, STEL 300 ppm
Iodides	Not listed	Not listed	Not listed
Methanol	200ppm	200ppm(260mg/m3)(skin )	TWA 200 ppm, STEL 250 ppm (Skin)
2,4-Pentanedione	Not listed	Not listed	TWA 25 ppm, STEL – (Skin)

	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 ethyl ketone	Not listed	Not listed
Iodides	Not listed	Not listed
Methanol	Not listed	Not listed

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.

2,4-Pentanedione	Not listed	Not listed
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TLVs (ACGIH) can be referenced at: <https://www.acgih.org/>

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.
		Use explosion-proof electrical equipment and prevent from static electricity.
Personal Protective Equipment	Respiratory Protection	Select and wear appropriate respiratory protective equipment based on risk assessments and other measures.
	Hand Protection	Wear appropriate protective equipment, including impervious or impermeable safety gloves, as circumstances dictate. 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	Wear appropriate protective equipment such as impervious and impermeable protective clothing and footwear, as circumstances dictate. Select and wear appropriate protective clothing and footwear based on risk assessments and other measures.

#### Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State		Liquid
Form		Liquid
Colour		Black
Odour		Solvent odor
Melting Point/Freezing Point		-86.4°C (as 2-Butanone)
Boiling Point or Initial Boiling Point and Boiling Ranges		79.6 °C (as 2-Butanone)
Flammability		Flammability
Lower and Upper Explosion Limit / Flammability Limit	Lower Limit	1.8vol% (as 2-Butanone)
	Upper Limit	11.5vol% (as 2-Butanone)
Flash Point		-4.1°C (Tag Closed Cup)
Auto-Ignition Temperature		505°C (as 2-Butanone)
Decomposition Temperature		No data available
pH		No data available
Kinematic Viscosity		3.7mm <sup>2</sup> /s
Solubility		water: 29g/100mL (20°C) (as 2-Butanone)
Partition Coefficient : n-Octanol/Water		0.29(as 2-Butanone)
Vapour Pressure		10.5kPa (20°C) (as 2-Butanone)
Density and/or Relative Density		0.909
Relative Gas Density		2.41 (Air=1, as 2-Butanone)
Particle Characteristics		No data available

#### Section 10 – STABILITY AND REACTIVITY

Reactivity	Does not react dangerously under normal conditions.
Chemical Stability	Stable under normal conditions of use.

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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	Classified as Category 4 since ATE is 300 to 2000(mg/kg).
	Dermal	Classification not possible since lots of the concentrations of unknown ingredients.
	Inhalation	(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) Classification not possible since lots of the concentrations of unknown ingredients.
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 1 since the sum of Eye Category 1 ingredients is more than 3%.
Respiratory Sensitization		Classification not possible since lots of the concentrations of unknown ingredients.
Skin Sensitization		Classification not possible since lots of the concentrations of unknown ingredients.
Germ Cell Mutagenicity		Classified as Category 2 since one of the Category 2 ingredients is more than 1.0%.
Carcinogenicity		Classified as Category 2 since one of the Category 2 ingredients is more than 1.0%.
Reproductive Toxicity		(Reproductive toxicity) Classified as Category 1B since one of the Category 1B ingredients is more than 0.3%.
		(Reproductive toxicity, effects on or via lactation)  Classification not possible since lots of the concentrations of unknown ingredients.
Specific Target Organ Toxicity (Single Exposure)		Classified as Category 2(kidney) since one of the Category 2(kidney) ingredients is more than 10%.
		Classified as Category 1(optic organs) since one of the Category 1(optic organs) ingredients is more than 10%.
		Classified as Category 1(systemic toxicity) since one of the Category 1(systemic toxicity) ingredients is more than 10%.
		Classified as Category 1(central nervous system) since one of the Category 1(central nervous system) ingredients is more than 10%.
		Classified as Category 2(central nervous system) since one of the Category 1(central nervous system) ingredients is 1 to 10%.
		Classified as Category 3(narcotic effects) since the sum of Category 3(narcotic effects) ingredients is more than 20%.

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Specific Target Organ Toxicity (Repeated Exposure)	Classified as Category 3(respiratory tract irritation) since the sum of Category 3(respiratory tract irritation) ingredients is more than 20%.
	Classified as Category 1(nervous system) since one of the Category 1(nervous system) ingredients is more than 10%.
	Classified as Category 1(optic organs) since one of the Category 1(optic organs) ingredients is more than 10%.
Aspiration Hazard	Classified as Category 1(central nervous system) since one of the Category 1(central nervous system) ingredients is more than 10%.
	Classification not possible since lots of the concentrations of unknown ingredients.

Section 12 – ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment, Short-Term (Acute)	Classified as Category 3 since the sum of (M × 100 × Category 1) + (10 × Category 2) + Category 3 ingredients is more than 25%.
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 in to 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> <p>When incinerating of waste materials, etc., do not use an incinerator without cleaning equipment, as harmful gas will be generated.</p>
Contaminated containers and packaging	<p>Clarify the contents of waste materials and entrust disposal to a waste disposal company.</p> <p>Empty containers should be treated as industrial wastes and not allowed to contain waste.</p>

Section 14 – TRANSPORT INFORMATION

International Regulations by Sea	Regulatory Information	Conform to the provisions of IMO.
	UN No.	1210

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.

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 Conform to the provisions of ICAO/IATA.  
 by Air  
 UN No. 1210  
 Proper Shipping Name PRINTING INK RELATED MATERIAL  
 Class 3  
 Packing Group II  
 Regulatory Information Complies with the Fire Service Act.  
 by Road or Rail  
 Regulatory Information Conform to the provisions of the Ship Safety Law.  
 by Sea  
 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

Emergency Response Guide  
 Number

Regulatory Information Conform to the provisions of the Civil Aeronautics Law.  
 by Air  
 UN No. 1210  
 Proper Shipping Name PRINTING INK RELATED MATERIAL  
 Class 3  
 Packing Group II  
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#### Section 15 – REGULATORY INFORMATION

Industrial Safety and Health  
 Act

Ordinance on the Prevention of Organic Solvent Poisoning Paragraph  
 1 Article 1 part 4 (Second-class organic solvents, etc.), Enforcement  
 Ordinance 2 of Appendix 6

Methanol  
 Methyl ethyl ketone

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

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)

2,4-Pentanedione  
 Methanol  
 Methyl ethyl ketone

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

Iodine compounds (iodides)  
 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 2-1and part 2, Attached  
Table9)

Iodine compounds (iodides)(Trade Secrets)

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)

2,4-Pentanedione(Ordinance on Industrial Safety and Health  
Number of Appended Tables 2:42) (Trade Secrets)

Methanol(Ordinance on Industrial Safety and Health Number of  
Appended Tables 2:2006) (Trade Secrets)

Methyl ethyl ketone(Ordinance on Industrial Safety and Health  
Number of Appended Tables 2:2034) (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 (ii))

Chemical substances that damage the skin, etc., and harmful  
substances that absorb the skin (List of substances subject to Article  
594-2, Paragraph 1 of the Safety and Health Regulations, 0531-9  
issued on May 31, Reiwa 4, and 0704-1 and 5 of July 4, Reiwa 5)

2,4-Pentanedione

Methanol

Methyl ethyl ketone

Industrial Safety and Health  
Act(Substances subject to  
labeling and notification  
,Carcinogenic substances)  
(Implementation in Reiwa  
8)

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)

2,4-Pentanedione

Methanol

Methyl ethyl ketone

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)

2,4-Pentanedione(Ordinance on Industrial Safety and Health  
Number of Appended Tables 2:42) (Trade Secrets)

Methanol(Ordinance on Industrial Safety and Health Number of  
Appended Tables 2:2006) (Trade Secrets)

Methyl ethyl ketone(Ordinance on Industrial Safety and Health  
Number of Appended Tables 2:2034) (Trade Secrets)

Industrial Safety and Health  
Act(Substances subject to  
labeling and notification  
,Carcinogenic substances)  
(Implementation in Reiwa  
9)

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)

2,4-Pentanedione

Methanol

Methyl ethyl ketone

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)

2,4-Pentanedione(Ordinance on Industrial Safety and Health  
Number of Appended Tables 2:42) (Trade Secrets)

Methanol(Ordinance on Industrial Safety and Health Number of  
Appended Tables 2:2006) (Trade Secrets)

	Methyl ethyl ketone (Ordinance on Industrial Safety and Health Number of Appended Tables 2:2034) (Trade Secrets)
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	Class 1 Designated Chemical Substances (Article 2, Paragraph 2 of the Law, Article 1, Appendix 1 of the Enforcement Ordinance)
Act on the Regulation of Manufacture and Evaluation of Chemical Substances	2,4-Pentanedione (control number: 568) (5.3%) Monitoring chemical substances (Article 2, Paragraph 4 of the Act)
Fire Service Act	Priority Assessment Chemical Substances (Article 2 part 5) 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)
Narcotics and Psychotropics Control Act	Narcotics and psychotropic raw materials (Article 2, Paragraph 1, Item 7, Appendix 4, Item 9 of the Law, Article 5 of the Designation Order)
Foreign Exchange and Foreign Trade Act	Import Trade Control Order Appended Table I part 16  Export approved goods: Narcotics and psychotropic raw materials (Article 48, Paragraph 3 of the Law; Article 2, Appendix 2, Paragraph 21-3 of the Export Order; Article 1 of Ministerial Ordinance No. 38 of June 19, 1992) Export approved goods, specified hazardous waste, etc. (Article 48, Paragraph 3 of the Law, Article 2, Attached Table 2, Paragraph 35-2 of the Export Order)
Ship Safety Law Aviation Law	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 Second-class organic solvents.  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.
Act on the Regulation of Manufacture and Evaluation of Chemical Substances	2-butanone and methyl ethyl ketone, MEK and ethyl methyl ketone are the same substances. We have a Priority Assessment Chemical Substance posting threshold of 0.1% or more.  The posting of a Priority Assessment Chemical Substance in SDS is as of November 2019 as an effort.
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.  Substances treated as equipment are exempt from this law.

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.

RoHS Specified Substance Concentration	Cd<100ppm Pb, Hg, Cr(VI), PBB, PBDE, DEHP, DBP, BBP, DIBP <1000ppm
Allowable concentration Standards Cited Literature	TLV-TWA: Threshold Limit Values-Time Weighted Average STEL (Short Term Exposure Limit JIS Z7253:2019 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)
Additional Information about This Product:	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.