Issue 2020.11.04

Revision 2024.11.11

Safety Data Sheet (SDS)

Section 1 – CHEMICALS AND COMPANY IDENTIFICATION

Chemical Identifier	Ink-4137W
Product Code	4137W
Reference Number	58
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)

	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)
	Wear protective gloves/protective clothing/eye protection/face protection.(P280)
Response	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)
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 Name	Concentration or Its Ranges (wt%)	Formula	ENCS No./ISHL No.		CAS RN
			ENCS No.	ISHL No.	
Methyl isopropyl ketone	50-60	CH3CH(CH3)COCH3	(2)-542	Registered	563-80-4
Titanium(IV) oxide	10-20	TiO2	(1)-558,(5)-5225	Registered	13463-67-7

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	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. IF exposed or concerned: Get medical advice and attention. Specific treatment.
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: Get medical advice and attention.
Ingestion	Rinse mouth. IF SWALLOWED: Call a doctor if you feel unwell. IF exposed or concerned: Get medical advice and attention.

Section 5 – FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing agent suitable for type of surrounding fire. When dust occurs, use dry sand.
Unsuitable Extinguishing Media	Cylindric water.
Specific Hazards in Case of Fire	Risk of producing harmful gases such as carbon 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.
Special Protective Equipment and Precautions for Fire Fighters	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 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. Avoid breathing dust/fume/gas/mist/vapours/spray. 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 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 isopropyl ketone	Not listed	Not listed	TWA 20 ppm, STEL -
Titanium(IV) oxide	Not listed	0.3 mg/m3; 【 Dust allowable concentration 】(Second type dust) inhalative dust 1mg/m3 Total dust 4mg/m3	TWA 10 mg/m3, STEL -

	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
Titanium(IV) oxide	Not listed	Not listed

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 electrocity.
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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State		Liquid
Form		Liquid
Colour		White
Odour		Solvent odor
Melting Point/Freezing Point		-95℃ (as Methyl isopropyl ketone)
Boiling Point or Initial Boiling Point and Boiling Ranges		94℃ (as Methyl isopropyl ketone)
Flammability		Flammability
Lower and Upper Explosion Limit / Flammability Limit	Lower Limit	1.2vol% (as Methyl isopropyl ketone)
	Upper Limit	8vol% (as Methyl isopropyl ketone)
Flash Point		0.8℃ (Tag Closed Cup)
Auto-Ignition Temperature		475℃(as Methyl isopropyl ketone)
Decomposition Temperature		No data available
pH		No data available
Kinematic Viscosity		4.4mm2/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℃) (as Methyl isopropyl ketone)
Density and/or Relative Density		1.03
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℃
Density and/or Relative Density		0.8046(16℃/4℃)
as Titanium(IV) oxide		
Melting Point/Freezing Point		1640℃
Decomposition Temperature		=>3000℃
Density and/or Relative Density		4.17, 3.84, 4.26

Section 10 - STABILITY AND REACTIVITY

Reactivity	Does not react dangerously under nomal 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	Classified as Not classified since Category 5 is not adopted in JIS Z 7252.
	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 2A since the sum of Eye Category 2B + Eye Category 2 ingredients is more than 10%.
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	Classification not possible since lots of the concentrations of unknown ingredients.
Carcinogenicity	Classification not possible since lots of the concentrations of unknown ingredients.
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) Classification not possible since lots of the concentrations of unknown ingredients.
Specific Target Organ Toxicity (Single Exposure)	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	Classification not possible since lots of the concentrations of unknown ingredients.

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.

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.

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.

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 Transported in Bulk According to MARPOL 73/78, Annex Ⅱ, the IBC Code	Not applicable
	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
Regulations in Japan	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 Transported in Bulk According to MARPOL 73/78, Annex Ⅱ, the IBC Code	Not applicable
	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	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 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) Methyl propyl ketone(Number:590)(Trade Secrets) Titanium(IV) oxide(Trade Secrets) Organic Solvent Poisoning Prevention Regulations Article 1-2 (Class 2 Organic Solvents, etc.), Enforcement Ordinance Appendix 6-2 Not applicable
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 petroleums 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

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. 3-methyl-2-butanone and Methyl isopropyl ketone are the same substances. Methyl isopropyl ketone belongs to Methyl propyl ketone.
Act on the Regulation of Manufacture and Evaluation of Chemical 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 petroleums 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	Substances treated as equipment are exempt from this law. Cd<100ppm Pb, Hg, Cr(Ⅵ), PBB, PBDE, DEHP, DBP, BBP, DIBP <1000ppm
Allowable concentration	TLV-TWA：Threshold Limit Values-Time Weighted Average STEL (Short Term Exposure Limit
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)
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.