

SAFETY DATA SHEET

TH-TYPE-F

SECTION 1: Identification

1.1. Product identifier

TRADE NAME TH-TYPE-F

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

RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE Industrial purposes

USES ADVISED AGAINST None known.

1.3. Details of the supplier of the safety data sheet

▼ COMPANY AND ADDRESS **Hitachi Industrial Equipment & Solutions America, LLC**
75 NW Point Blvd Suite D
60007 Elk Grove Village, IL
United States
+1 (800) 627-5464
<https://mc.hitachi-iesa.com>

SDS DATE 7/18/2025
SDS VERSION DATE OF PREVIOUS VERSION 1.0
7/14/2025 (1.0)

1.4. Emergency telephone number

+1 (800) 424-9300

SECTION 2: Hazard(s) identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.1. Classification of the substance or mixture

Flam. Liq. 2; H225, Highly flammable liquid and vapour.
Eye Dam. 1; H318, Causes serious eye damage.

2.2. Label elements

HAZARD PICTOGRAM(S)



SIGNAL WORD Danger

HAZARD STATEMENT(S) Highly flammable liquid and vapour. (H225)
Causes serious eye damage. (H318)

PRECAUTIONARY STATEMENT(S)

General If medical advice is needed, have product container or label at hand. (P101)
Keep out of reach of children. (P102)

Prevention Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)
Keep container tightly closed. (P233)
Wear eye protection/protective gloves. (P280)

Response IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

	present and easy to do. Continue rinsing. (P305+P351+P338) Immediately call a POISON CENTER/doctor. (P310) In case of fire: Use water mist/carbon dioxide/alcohol-resistant foam to extinguish. (P370+P378)
Storage	Store in a well-ventilated place. Keep cool. (P403+P235)
Disposal	Dispose of contents/container in accordance with local regulation. (P501)
ADDITIONAL LABELLING	Not applicable.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

PRODUCT/SUBSTANCE	IDENTIFIERS	% W/W	CLASSIFICATION	NOTE
ethanol;ethyl alcohol	CAS No.: 64-17-5	80-95%	Flam. Liq. 2, H225	
propan-1-ol;n-propanol	CAS No.: 71-23-8	5-10%	Flam. Liq. 2, H225 Eye Dam. 1, H318 STOT SE 3, H336	

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: First-aid measures

4.1. Description of first aid measures

GENERAL INFORMATION	If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.
INHALATION	Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.
SKIN CONTACT	Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.
EYE CONTACT	If in eyes: Flush eyes with plenty of water or salt water (20-30 °C) for at least 30 minutes and continue until irritation stops. Remove contact lenses. Make sure you flush under the upper and lower eyelids. Seek medical assistance immediately and continue flushing during transport.
INGESTION	If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink. In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.
BURNS	Rinse with water until pain stops then continue to rinse for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system. Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:

Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Highly flammable liquid and vapour.

In use may form flammable/explosive vapour-air mixture.

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Carbon oxides (CO / CO₂)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation.

Avoid direct contact with spilled substances.

Ensure adequate ventilation, especially in confined areas.

Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

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.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ground and bond container and receiving equipment.

Use explosion-proof [electrical/lighting/ventilating] equipment.

Use non-sparking tools.

Take action to prevent static discharges.

Avoid direct contact with the product.

Avoid contact during pregnancy and while nursing.

Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers and store protected from moisture and light. Containers should be dated when opened and tested periodically for the presence of peroxides. Do not exceed storage time limits. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Take action to prevent static discharges. Must be stored in a cool and well-ventilated area, away from possible sources of ignition.

RECOMMENDED STORAGE Keep only in original packaging.

MATERIAL

STORAGE CONDITIONS Dry, cool and well ventilated

INCOMPATIBLE MATERIALS Reducing agents
Strong oxidizing agents

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol;ethyl alcohol

Short term exposure limit (STEL) (ACGIH TLV) (ppm): 1000

Long term exposure limit (OSHA Table Z-1) (mg/m³): 1900

Long term exposure limit (OSHA Table Z-1) (ppm): 1000

propan-1-ol;n-propanol

Short term exposure limit (STEL) (NIOSH REL) (ppm): 250

Long term exposure limit (OSHA Table Z-1) (mg/m³): 500

Long term exposure limit (OSHA Table Z-1) (ppm): 200

Long term exposure limit (ACGIH TLV) (ppm): 100

Isopropyl Alcohol

Short term exposure limit (STEL) (ACGIH TLV) (ppm): 400

Short term exposure limit (STEL) (NIOSH REL) (ppm): 500

Long term exposure limit (OSHA Table Z-1) (mg/m³): 980

Long term exposure limit (OSHA Table Z-1) (ppm): 400

Long term exposure limit (ACGIH TLV) (ppm): 200

Part 1910 - Occupational Safety and Health Standards (29 CFR 1910.1000 TABLE Z-1 - Limits for Air Contaminants)

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

GENERAL RECOMMENDATIONS Smoking, drinking and consumption of food is not allowed in the work area.

EXPOSURE SCENARIOS There are no exposure scenarios implemented for this product.

EXPOSURE LIMITS Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

APPROPRIATE TECHNICAL MEASURES The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.

HYGIENE MEASURES Ensure that eyewash stations and safety showers are located within easy reach. Apply standard precautions during use of the product. Avoid inhalation of vapours.

MEASURES TO AVOID ENVIRONMENTAL EXPOSURE In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

MEASURES TO AVOID ENVIRONMENTAL EXPOSURE No specific requirements.

Individual protection measures, such as personal protective equipment

GENERALLY Use only protective equipment with a recognized certification mark, e.g. the UL mark.

RESPIRATORY EQUIPMENT

No specific requirements.

SKIN PROTECTION

No specific requirements.

HAND PROTECTION

MATERIAL	GLOVE THICKNESS (MM)	BREAKTHROUGH TIME (MIN.)	STANDARDS	
Butyl	0,3	> 240	EN374-2, EN16523-1, EN388	

EYE PROTECTION

TYPE	STANDARDS	
Safety glasses	EN166	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

PHYSICAL STATE	Liquid
COLOR	Colourless
ODOR	Alcohol odor
ODOR THRESHOLD (PPM)	No data available.
PH	No data available.
DENSITY (G/CM ³)	0.788
KINEMATIC VISCOSITY	No data available.
PARTICLE CHARACTERISTICS	Does not apply to liquids.

Phase changes

MELTING POINT/FREEZING POINT (°F)	No data available.
SOFTENING POINT/RANGE (°F)	Does not apply to liquids.
BOILING POINT (°F)	No data available.
VAPOR PRESSURE	No data available.
RELATIVE VAPOR DENSITY	No data available.
DECOMPOSITION TEMPERATURE (°F)	No data available.

Data on fire and explosion hazards

FLASH POINT (°F)	No data available.
FLAMMABILITY (°F)	The material is ignitable.
AUTO-IGNITION TEMPERATURE (°F)	No data available.
EXPLOSION LIMITS (% V/V)	No data available.

Solubility

SOLUBILITY IN WATER	Insoluble
N-OCTANOL/WATER COEFFICIENT (LOGKOW)	No data available.

SOLUBILITY IN FAT (G/L) No data available.

9.2. Other information

OTHER PHYSICAL AND No data available.

CHEMICAL PARAMETERS

OXIDIZING PROPERTIES No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions, including those associated with foreseeable emergencies

None known.

10.4. Conditions to avoid

Do not expose to any forms of heat (e.g. solar radiation). May lead to excess pressure.

Extremes of temperature

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

Moisture

10.5. Incompatible materials

Reducing agents

Strong oxidizing agents

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

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Long term effects

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2024)

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system. Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

Other information

Isopropyl Alcohol has been classified by IARC as a group 3 carcinogen.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

12.2. Persistence and degradability

Based on available data, the classification criteria are not met.

12.3. Bioaccumulative potential

Based on available data, the classification criteria are not met.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Other adverse effects

None known.

SECTION 13: Disposal considerations

RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)

None of the components are listed

Specific labelling

Contaminated packing

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN PROPER SHIPPING NAME	14.3 HAZARD CLASS(ES)	14.4 PG*	14.5 ENVV**	OTHER INFORMAT ION:
DOT	UN1210	PRINTING INK	Transport hazard class: 3 Label: 3 Classification code: F1 	II	No	Limited quantities: 5 L Tunnel restriction code: (D/E) See below for additional information.
IMDG	UN1210	PRINTING INK	Transport hazard class: 3 Label: 3 Classification code: F1 	II	No	Limited quantities: 5 L EmS: F-E S-D See below for

Conforms to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200 / revised 2024)

	14.1 UN / ID	14.2 UN PROPER SHIPPING NAME	14.3 HAZARD CLASS(ES)	14.4 PG*	14.5 ENV**	OTHER INFORMAT ION:
						additional information .
IATA	UN1210	PRINTING INK	Transport hazard class: 3 Label: 3 Classification code: F1 	II	No	See below for additional information .

* Packing group

** Environmental hazards

Additional information

This product is within scope of the regulations of transport of dangerous goods.

DOT / See § 172.101 Hazardous Materials Table for any information on special provisions, requirements, or warnings in connection with transport. See § 172.602, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.

IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. U.S. Federal regulations

TSCA (THE NON-CONFIDENTIAL PORTION)	ethanol;ethyl alcohol is listed propan-1-ol;n-propanol is listed Isopropyl Alcohol is listed
CLEAN AIR ACT	None of the components are listed
EPCRA SECTION 302	None of the components are listed
EPCRA SECTION 304	None of the components are listed
EPCRA SECTION 313	Isopropyl Alcohol is listed
CERCLA	None of the components are listed
HAZARDOUS CHEMICAL INVENTORY REPORTING	This product is subject to Tier II reporting.

State regulations

CALIFORNIA / PROP. 65	None of the components are listed
MASSACHUSETTS / RIGHT TO KNOW ACT	ethanol;ethyl alcohol is listed propan-1-ol;n-propanol is listed Isopropyl Alcohol is listed
NEW JERSEY / RIGHT TO KNOW ACT	ethanol;ethyl alcohol / Substance number: 0844 ethanol;ethyl alcohol is on the Special Health Hazard Substance List propan-1-ol;n-propanol / Substance number: 1605 propan-1-ol;n-propanol is on the Special Health Hazard Substance List

	— Isopropyl Alcohol / Substance number: 1076 Isopropyl Alcohol is on the Special Health Hazard Substance List
NEW YORK / RIGHT TO KNOW ACT	— ethanol;ethyl alcohol is listed ethanol;ethyl alcohol is regulated with a Treshold Reporting Quantity (TRQ) of: 0 pounds
	— propan-1-ol;n-propanol is listed propan-1-ol;n-propanol is regulated with a Treshold Reporting Quantity (TRQ) of: 10 pounds
	— Isopropyl Alcohol is listed Isopropyl Alcohol is regulated with a Treshold Reporting Quantity (TRQ) of: 0 pounds
PENNSYLVANIA / RIGHT TO KNOW ACT	— ethanol;ethyl alcohol is listed
	— propan-1-ol;n-propanol is listed
	— Isopropyl Alcohol is listed Isopropyl Alcohol is hazardous to the environment (E)

15.4. Restrictions for application

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

15.5. Demands for specific education

No specific requirements.

15.6. Additional information

Not applicable.

15.7. Chemical safety assessment

No

15.8. Sources

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H225, Highly flammable liquid and vapour.

H318, Causes serious eye damage.

H336, May cause drowsiness or dizziness.

The full text of identified uses as mentioned in section 1

None known.

Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response Compensation and Liability Act

DOT = Department of Transportation

EINECS = European Inventory of Existing Commercial chemical Substances

EPCRA = Emergency Planning and Community Right-To-Know Act

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HCIS = Hazardous Chemical Information System

HNOC = Hazards Not Otherwise Classified

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

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)
NFPA = National Fire Protection Association
NIOSH = National Institute for Occupational Safety and Health
OECD = Organisation for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by HCS (29 CFR 1910.1200).

The classification of the mixture in regard to physical hazards has been based on experimental data.

The safety data sheet is validated by

Else Super

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en