

## 1. Product and Company Identification

**Product Code:** TH-88-FT  
**Product Name:** TH-88-FT  
**Trade Name:** TH-88-FT  
**Company Name:** Hitachi Industrial Equipment & Solutions America, LLC  
2730 Greenleaf Avenue **Phone Number:**  
Elk Grove Village, IL 60007 (866)583-0048  
**Web site address:** <https://www.hitachi-iesa.com/industrial-marking-and-coding>  
**Emergency Contact:** Chemtrec (800)424-9300

## 2. Hazards Identification

Flammable Liquids, Category 2  
Acute Toxicity: Oral, Category 4  
Acute Toxicity: Inhalation, Category 4  
Specific Target Organ Toxicity (single exposure), Category 3



**GHS Signal Word:** **Danger**

**GHS Hazard Phrases:** Highly flammable liquid and vapor.  
Harmful if swallowed.  
Harmful if inhaled.  
May cause respiratory irritation.

**GHS Precaution Phrases:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep container tightly closed.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

**GHS Response Phrases:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
Rinse mouth.

**GHS Storage and Disposal Phrases:** Store in cool/well-ventilated place.  
Store locked up.  
Dispose of contents/container in accordance with local regulations.

<b>Potential Health Effects (Acute and Chronic):</b>	Chronic: Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen. Chronic overexposure to vapors may cause lung damage. Hazards not otherwise classified (HNOC) or not covered by GHS.
<b>Inhalation:</b>	Causes respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness. May cause central nervous system effects such as nausea and headache. Neurobehavioural effects of exposure to MEK (200 ppm for 4 hrs) were studied with 137 volunteers. There were no statistically significant effects observed in biochemical, psychomotor, sensorimotor and psychological tests.
<b>Skin Contact:</b>	May be absorbed through the skin in harmful amounts. Repeated or prolonged exposure may cause drying and cracking of the skin. Only one human case of skin sensitization was located. Negative results were obtained in an animal test; MEK did not produce skin sensitization in the mouse ear thickness test.
<b>Eye Contact:</b>	Causes eye irritation. Vapors may cause eye irritation. Animal evidence suggests that MEK is a moderate to severe eye irritant.
<b>Ingestion:</b>	May cause irritation of the digestive tract. Possible aspiration hazard. May cause central nervous system depression. Animal evidence suggests that MEK can be aspirated (inhaled) into the lungs during ingestion or vomiting.

### 3. Composition/Information on Ingredients

CAS #	Hazardous Components (Chemical Name)	Concentration
78-93-3	Methyl ethyl ketone	60.0 -70.0 %
64-17-5	Ethyl alcohol	20.0 -30.0 %
67-56-1	Methanol	1.0 -5.0 %

### 4. First Aid Measures

<b>Emergency and First Aid Procedures:</b>	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>In Case of Inhalation:</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. If breathed in, move person into fresh air. Consult a physician.
<b>In Case of Skin Contact:</b>	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse. Wash off with soap and plenty of water. Consult a physician.
<b>In Case of Eye Contact:</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<b>In Case of Ingestion:</b>	Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward. Do NOT induce vomiting. Rinse mouth with water. Consult a physician.
<b>Signs and Symptoms Of Exposure:</b>	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
<b>Indication of any immediate medical attention and special treatment needed:</b>	No data available.
<b>Note to Physician:</b>	Treat symptomatically and supportively.

## 5. Fire Fighting Measures

<b>Flash Pt:</b>	> -7.00 C (19.4 F) Method Used: Estimate
<b>Explosive Limits:</b>	LEL: UEL:
<b>Autoignition Pt:</b>	404.00 C (759.2 F)
<b>Suitable Extinguishing Media:</b>	In case of fire, use carbon dioxide, dry chemical powder or appropriate foam. Water may be ineffective because it will not cool material below its flash point. Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.
<b>Fire Fighting Instructions:</b>	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Wear self contained breathing apparatus for fire fighting if necessary. Further information.
<b>Flammable Properties and Hazards:</b>	Carbon oxides, No data available.

## 6. Accidental Release Measures

<b>Protective Precautions, Protective Equipment and Emergency Procedures:</b>	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.
<b>Environmental Precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Use proper personal protective equipment as indicated in Section 8. Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

## 7. Handling and Storage

<b>Precautions To Be Taken in Handling:</b>	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.
<b>Precautions To Be Taken in Storing:</b>	Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: -20 - -10 deg.C. Handle and store under inert gas.

**8. Exposure Controls/Personal Protection**

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
78-93-3	Methyl ethyl ketone	PEL: 200 ppm	TLV: 200 ppm STEL: 300 ppm	
64-17-5	Ethyl alcohol	PEL: 1000 ppm	TLV: 1000 ppm STEL: 1000 ppm	
67-56-1	Methanol	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	

**Respiratory Equipment (Specify Type):** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi- purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Eye Protection:** Wear chemical splash goggles. Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Protective Gloves:** Wear appropriate protective gloves to prevent skin exposure. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Other Protective Clothing:** Wear appropriate protective clothing to prevent skin exposure. Impervious clothing. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Complete suit protecting against chemicals.

**Engineering Controls (Ventilation etc.):** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

**Work/Hygienic/Maintenance Practices:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Environmental Exposure Controls:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## 9. Physical and Chemical Properties

**Physical States:** [ ] Gas [ X ] Liquid [ ] Solid

**Appearance and Odor:** Blue.  
characteristic odor.

**pH:**

**Melting Point:** -87.00 C (-124.6 F)

**Boiling Point:** 64.00 C (147.2 F) - 65.00 C (149.0 F)

**Flash Pt:** > -7.00 C (19.4 F) Method Used: Estimate

**Evaporation Rate:**

**Flammability (solid, gas):**

**Explosive Limits:** LEL: UEL:

**Vapor Pressure (vs. Air or mm Hg):**

**Vapor Density (vs. Air = 1):**

**Specific Gravity (Water = 1):**

**Density:** ~ 0.8044 G/CM3

**Solubility in Water:**

**Octanol/Water Partition Coefficient:**

**Autoignition Pt:** 404.00 C (759.2 F)

**Decomposition Temperature:**

**Viscosity:**

## 10. Stability and Reactivity

**Reactivity:** No data available.

**Stability:** Unstable [ ] Stable [ X ]

**Conditions To Avoid - Instability:** ignition sources, Excess heat, Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Incompatibility - Materials To Avoid:** Strong oxidizing agents, Strong acids, 2-propanol, Oxidizing agents, Alkali metals, Ammonia, Peroxides, acids, Bases.

**Hazardous Decomposition or Byproducts:** Carbon monoxide, Carbon dioxide, Other decomposition products: No data available. In the event of fire: see section 5.

**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]

**Conditions To Avoid - Hazardous Reactions:** No data available.

## 11. Toxicological Information

<b>Toxicological Information:</b>	Germ cell mutagenicity: No data available. Reproductive toxicity. Aspiration hazard:
<b>Irritation or Corrosion:</b>	Skin corrosion/irritation. No data available. Serious eye damage/eye irritation:
<b>Sensitization:</b>	No data available.
<b>Chronic Toxicological Effects:</b>	Specific target organ toxicity - single exposure: No data available. Specific target organ toxicity - repeated exposure:
<b>Carcinogenicity/Other Information:</b>	CAS# 78-93-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65. IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
78-93-3	Methyl ethyl ketone	n.a.	n.a.	n.a.	n.a.
64-17-5	Ethyl alcohol	n.a.	1	A4	n.a.
67-56-1	Methanol	n.a.	n.a.	n.a.	n.a.

## 12. Ecological Information

<b>General Ecological Information:</b>	Environmental: Substance evaporates in water with T1/2= 3D (rivers) to 12D (lakes). Substance is not expected to bioconcentrate in marine life. Physical: Substance photodegrades in air with T1/2 = 2.3 days. Oxidizes rapidly by photo-chemical reactions in air. Readily biodegradable meeting the 10 day window criterion. Not expected to bioaccumulate significantly.
<b>Results of PBT and vPvB assessment:</b>	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
<b>Persistence and Degradability:</b>	No data available.
<b>Bioaccumulative Potential:</b>	No data available.
<b>Mobility in Soil:</b>	No data available.

## 13. Disposal Considerations

<b>Waste Disposal Method:</b>	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: CAS# 78-93-3: waste number U159 (Ignitable waste, Toxic waste). Product. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Contaminated packaging.
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## 14. Transport Information

**LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Printing ink related material  
**DOT Hazard Class:** 3 FLAMMABLE LIQUID  
**UN/NA Number:** UN1210 **Packing Group:** II



**15. Regulatory Information**

**EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists**

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
78-93-3	Methyl ethyl ketone	No	Yes 5000 LB	No
64-17-5	Ethyl alcohol	No	No	No
67-56-1	Methanol	No	Yes 5000 LB	Yes

**This material meets the EPA**  Yes  No Acute (immediate) Health Hazard  
**'Hazard Categories' defined**  Yes  No Chronic (delayed) Health Hazard  
**for SARA Title III Sections**  Yes  No Fire Hazard  
**311/312 as indicated:**  Yes  No Sudden Release of Pressure Hazard  
 Yes  No Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
78-93-3	Methyl ethyl ketone	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: TAC, Title 8; NC TAP: Yes
64-17-5	Ethyl alcohol	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8; NC TAP: No
67-56-1	Methanol	TSCA: Yes - Inventory; CA PROP.65: Yes; CA TAC, Title 8: TAC, Title 8; NC TAP: Yes

CAS #	Hazardous Components (Chemical Name)	International Regulatory Lists
78-93-3	Methyl ethyl ketone	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes - 1193; Australia ICS: Yes; New Zealand IOC: Yes; Japan ENCS: Yes - (2)-542; Japan ISHL: No; Israel HSL: No; Germany WHCS: Yes - 150; Switzerland Giftliste 1: Yes - G-2429; Switzerland INNS: No; REACH: Yes - (R), (P)
64-17-5	Ethyl alcohol	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes; Australia ICS: Yes; New Zealand IOC: Yes; Japan ENCS: Yes - (2)-202; Japan ISHL: No; Israel HSL: Yes - Cat.; Germany WHCS: Yes - 96; Switzerland Giftliste 1: Yes - G-1158; Switzerland INNS: No; REACH: Yes - (R), (P)
67-56-1	Methanol	Canadian DSL: Yes; Canadian NDSL: No; Mexico INSQ: Yes; Australia ICS: Yes; New Zealand IOC: Yes; Japan ENCS: Yes - (2)-201; Japan ISHL: No; Israel HSL: Yes - Cat.; Germany WHCS: Yes - 145; Switzerland Giftliste 1: Yes - G-2063; Switzerland INNS: No; REACH: Yes - (R), (P)



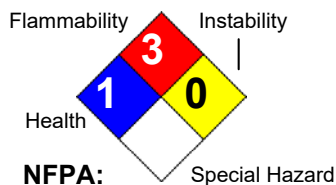
**16. Other Information**

**Revision Date:** 07/01/2015

**Hazard Rating System:**

<b>HEALTH</b>		<b>1</b>
<b>FLAMMABILITY</b>		<b>3</b>
<b>PHYSICAL</b>		<b>0</b>
<b>PPE</b>		<b>B</b>

**HMIS:**



**NFPA:**

**Additional Information About This Product:** To the best of our knowledge, the information contained here in 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.

Hitachi Contact Information:

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**Company Policy or Disclaimer:**