

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

## Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** JP-R96-FT  
**Product Name:** JP-R96-FT Printing Ink  
**X Code:**
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
- 1.3 Details of the Supplier of the Safety Data Sheet:**  
**Company Name:** Hitachi America, Ltd.  
50 Prospect Avenue  
Tarrytown, NY 10591  
**Information:** Garan Myers (866)-583-0048
- 1.4 Emergency telephone number:**  
**Emergency Contact:** Chemtrec (800)424-9300

## Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**  
**2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
Flammable Liquids, Category 2  
Skin Corrosion/Irritation, Category 2  
Serious Eye Damage/Eye Irritation, Category 2A  
Toxic To Reproduction, Category 1B  
Target Organ Systemic Toxicity (single exposure), Category 1
- 2.2 Label Elements:**  
**2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



**GHS Signal Word:** Danger

**GHS Hazard Phrases:**

H225 - Highly flammable liquid and vapor.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H360 - May damage fertility or the unborn child .  
H370 - Causes damage to organs  
EUH066 - Repeated exposure may cause skin dryness or cracking.

**GHS Precaution Phrases:**

P233 - Keep container tightly closed.  
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P240 - Ground/bond container and receiving equipment.  
P241 - Use explosion-proof electrical/ventilating/lighting/.../ equipment.  
P243 - Take precautionary measures against static discharge.  
P242 - Use only non-sparking tools.  
P264 - Wash hands thoroughly after handling.  
P362+364 - Take off contaminated clothing and wash it before reuse.  
P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P281 - Use personal protective equipment as required.  
P270 - Do not eat, drink or smoke when using this product.  
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.

**GHS Response Phrases:**

P370+378 - In case of fire, use ... to extinguish.

P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P302+352 - IF ON SKIN: Wash with plenty of soap and water.

P321 - Specific treatment see ... on this label.

P332+313 - If skin irritation occurs, get medical advice/attention.

P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313 - If eye irritation persists, get medical advice/attention.

P308+313 - IF exposed or concerned: Get medical attention/advice.

P307+311 - IF exposed: Call a POISON CENTER or doctor/physician.

P322 - Specific measures see ... on this label.

**GHS Storage and Disposal Phrases:**

P403+235 - Store in cool/well-ventilated place.

P501 - Dispose of contents/container to ....

P405 - Store locked up.

**2.3 Adverse Human Health** Chronic: Chronic inhalation may cause effects similar to those of acute inhalation.

**Effects and Symptoms:** 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. Prolonged or repeated skin contact may cause dermatitis. Adverse reproductive effects have been reported in animals. Testicular effects in rats were noted after repeated, high-dose oral and inhalation exposures. (BASF) Human occupational exposure has been associated with chronic eye irritation, headaches, and irritant contact dermatitis. Airborne concentrations of 49 to 83 ppm are intolerable. (REPROTEXT) Chronic ingestion may cause dizziness, ringing in the ears, visual disturbances, tremors, and mental confusion.

**2.3.1 Inhalation:** 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. May cause headache. Material has a very low vapor pressure at room temperature, so inhalation exposures are not expected unless material is heated or misted. May cause respiratory tract irritation. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death. May be harmful if inhaled.

**2.3.2 Skin Contact:** 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. Causes skin irritation. May be harmful if absorbed through the skin. Not expected to cause an allergic skin reaction. Because of the high permeability rate of N-methylpyrrolidone in human skin, prolonged exposures should be avoided. May cause skin irritation.

**2.3.3 Eye Contact:** Causes eye irritation. Vapors may cause eye irritation. Animal evidence suggests that MEK is a moderate to severe eye irritant. May cause temporary corneal clouding. May cause eye irritation.

**2.3.4 Ingestion:** 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. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Harmful if swallowed. May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of

the blood), convulsions, and death. Methemoglobinemia is characterized by dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), rapid heart rate and chocolate-brown colored blood.

### Section 3. Composition/Information on Ingredients

CAS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
78-93-3	Methyl ethyl ketone	40.0 -70.0 %	201-159-0 606-002-00-3	Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336
872-50-4	N-Methyl-2-pyrrolidone	1.0 -5.0 %	212-828-1 606-021-00-7	Skin Corr. 2: H315 Eye Damage 2A: H319 TOST (SE) 3: H335 H336 Toxic Repro. 1B: H360
67-56-1	Methanol	1.0 -5.0 %	200-659-6 603-001-00-X	Flam. Liq. 2: H225 Acute Tox.(O) 3: H301 Acute Tox.(D) 3: H311 Acute Tox.(I) 3: H331 TOST (SE) 1: H370
7790-69-4	Lithium nitrate	0.0 -1.0 %	232-218-9 NA	

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

**In Case of Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Remove victim to fresh air. If not breathing give artificial respiration. Remove from exposure and move to fresh air immediately. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**In Case of Skin Contact:** 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. Flush with copious amounts of water for at least 15 minutes. Call a physician. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

**In Case of Eye Contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid. In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

**In Case of Ingestion:** 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. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Get medical aid. Wash out mouth with water provided person is conscious. Call a physician immediately. Do NOT induce vomiting. Call a poison control center.

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** Gastrointestinal disturbances. May cause convulsions.

**Acute and Delayed:** CONDITIONS AGGRAVATED BY EXPOSURE:

The toxicological properties have not been thoroughly investigated.

**Note for the Doctor:** Treat symptomatically and supportively.

## Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** 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 appropriate foam. Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam. Use water only! Do NOT use carbon dioxide or dry chemical.
- 5.2 Flammable Properties and Hazards:**
- Flash Pt:** > -7.00 C Method Used: Estimate
- Explosive Limits:** LEL: UEL:
- Autoignition Pt:** 346.00 C
- 5.3 Fire Fighting Instructions:** 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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustible liquid and vapor. Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Strong oxidizer. Contact with other material may cause fire.

## Section 6. Accidental Release Measures

- 6.3 Methods and Material For Containment and Cleaning Up:** 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. PROCEDURE(S) OF PERSONAL PRECAUTION(S)
- Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.
- Methods for cleaning up.
- Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Keep combustibles (wood, paper, oil, etc. ) away from spilled material. Do not let this chemical enter the environment.

## Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** 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. Use with adequate ventilation. Keep away from heat and flame. Avoid breathing dust, mist, or vapor. User Exposure: Avoid prolonged or repeated exposure. Do not breathe dust. Minimize dust generation and accumulation. Do not ingest or inhale. Keep from contact with clothing and other combustible materials.
- 7.2 Precautions To Be Taken in Storing:** Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Store in a cool, dry place. Store in a tightly

closed container. Keep container closed. Keep away from heat and open flame.  
Store at -20°C. Do not store near combustible materials.

## Section 8. Exposure Controls/Personal Protection

### 8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
78-93-3	Methyl ethyl ketone	TWA: 600 mg/m3 (200 ppm) STEL: 899 mg/m3 (300 ppm)	TWA: 600 mg/m3 (200 ppm) STEL: 900 mg/m3 (300 ppm)	TWA: 600 mg/m3 STEL: 900 mg/m3
872-50-4	N-Methyl-2-pyrrolidone	TWA: 103 mg/m3 (25 ppm) STEL: 309 mg/m3 (75 ppm)		
67-56-1	Methanol	TWA: 266 mg/m3 (200 ppm) STEL: 333 mg/m3 (250 ppm)	TWA: 260 mg/m3 (200 ppm) STEL: 1300 mg/m3 (1000 ppm)	TWA: 260 mg/m3
7790-69-4	Lithium nitrate			

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	
872-50-4	N-Methyl-2-pyrrolidone			
67-56-1	Methanol	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	
7790-69-4	Lithium nitrate			

### 8.2 Exposure Controls:

**8.2.1 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. Use adequate ventilation to keep airborne concentrations low. Safety shower and eye bath. Mechanical exhaust required.

### 8.2.2 Personal protection equipment:

- Eye Protection:** Wear chemical splash goggles. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- Protective Gloves:** Wear appropriate protective gloves to prevent skin exposure. Wear appropriate gloves to prevent skin exposure.
- Other Protective Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- 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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). (EU). Use supplied-air or SCBA respirators. Europe permits the use of type AXBEK full-face cartridge respirators (EN 14387).  
Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

**Work/Hygienic/Maintenance Practices:** Wash thoroughly after handling.

EXPOSURE LIMITS.  
Country Source Type Value.

Poland NDS 100 MG/M3  
Poland NDsch 300 MG/M3  
Poland NDSP -**Section 9. Physical and Chemical Properties****9.1 Information on Basic Physical and Chemical Properties**

**Physical States:**  Gas  Liquid  Solid  
**Appearance and Odor:** Light. Red. solvent odor.  
**Melting Point:** -87.00 C - 251.00 C  
**Boiling Point:** 80.00 C - 600.00 C  
**Flash Pt:** > -7.00 C Method Used: Estimate  
**Evaporation Rate:** 4.6 (BuAC=1)  
**Explosive Limits:** LEL: UEL:  
**Vapor Pressure (vs. Air or mm Hg):** 85 MM\_HG at 20.0 C  
**Vapor Density (vs. Air = 1):** > Air  
**Specific Gravity (Water = 1):** .920  
**Density:** ~ 7.66 LB/GA  
**Solubility in Water:** Miscible  
**Autoignition Pt:** 346.00 C

**9.2 Other Information**

**Percent Volatile:** > 79.0 %

**Section 10. Stability and Reactivity****10.1 Reactivity:**

**10.2 Stability:** Unstable  Stable

**10.3 Conditions To Avoid - Hazardous Reactions:**

**Possibility of Hazardous Reactions:** Will occur  Will not occur

**10.4 Conditions To Avoid - Instability:** ignition sources, Excess heat, Light, Incompatible materials, dust generation, Moisture, combustible materials.

**10.5 Incompatibility - Materials To Avoid:** Strong oxidizing agents, Strong acids, 2-propanol, acids, Acid chlorides, Acid anhydrides, Alkali metals, Oxidizing agents, Reducing agents, Strong reducing agents.

**10.6 Hazardous Decomposition Or Byproducts:** Carbon monoxide, Carbon dioxide, Nitrogen oxides, Phosphorous oxides.



## Section 11. Toxicological Information

- 11.1 Information on Toxicological Effects:** Epidemiology: No data available.  
Reproductive Effects: See actual entry in RTECS for complete information.  
Mutagenicity: Neurotoxicity: Other Studies: ROUTE OF EXPOSURE:  
Skin Contact: May cause skin irritation.  
Skin Absorption: Harmful if absorbed through the skin.  
Eye Contact: May cause eye irritation.  
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.  
Harmful if inhaled.  
Ingestion: Harmful if swallowed.
- TARGET ORGAN(S) OR SYSTEM(S)  
Eyes. Kidneys. Liver. Heart. No information found.  
Teratogenicity: No information available.
- Carcinogenicity/Other Information:** CAS# 78-93-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 872-50-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 7790-69-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
- Carcinogenicity:** NTP? No    IARC Monographs? No    OSHA Regulated? No

## Section 12. Ecological Information

- 12.1 Toxicity:** 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.  
No information available.  
Physical: No information available.  
Other: Biodegradable. Other: Do not empty into drains.

## Section 13. Disposal Considerations

- 13.1 Waste Disposal Method:** 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). RCRA U-Series: None listed. APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

## Section 14. Transport Information

**GHS Classification:** Flammable Liquids, Category 2 - Danger! Highly flammable liquid and vapor  
Skin Corrosion/Irritation, Category 2 - Warning! Causes skin irritation  
Serious Eye Damage/Eye Irritation, Category 2A - Warning! Causes serious eye irritation  
Toxic To Reproduction, Category 1B - Danger! May damage fertility or the unborn child  
Target Organ Systemic Toxicity (single exposure), Category 1 - Danger! Causes damage to {<target organs>}

### 14.1 LAND TRANSPORT (US DOT):

**DOT Proper Shipping Name:** Printing ink

**DOT Hazard Class:** 3 FLAMMABLE LIQUID  
**UN/NA Number:** UN1210 **Packing Group:** II

### 14.1 LAND TRANSPORT (Canadian TDG):

**TDG Shipping Name:** Printing ink

**UN Number:** 1210 **Packing Group:** II  
**Hazard Class:** 3 - FLAMMABLE LIQUID **TDG Classification:**

### 14.1 LAND TRANSPORT (European ADR/RID):

**ADR/RID Shipping Name:**  
**UN Number:** 1210 **Packing Group:** II  
**Hazard Class:** 3 - FLAMMABLE LIQUID

### 14.3 AIR TRANSPORT (ICAO/IATA):

**ICAO/IATA Shipping Name:** Printing ink

## Section 15. Regulatory Information

### Canadian WHMIS Classification:

CLASS B, DIVISION 2: Flammable Liquids  
CLASS D, DIVISION 2, SUBDIVISION A: Very Toxic Materials (carcinogens, reproductive toxicity, etc.)  
CLASS C: Oxidizing Material

## Section 16. Other Information

**Revision Date:** 03/19/2014

### Additional Information About This Product:

**Company Policy or Disclaimer:** The information and recommendations contained herein are, to the best of Hitachi's knowledge and belief, accurate and reliable as of the date issued. Because many factors may affect processing or application/use, HITACHI recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and



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