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

1.1 Product Code: JP-K83
   Product Name: JP-K83 Printing Ink
   X Code: Hitachi America, Ltd.

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
   Emergency Contact: Chemtrec (800)424-9300

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
   Carcinogenicity, Category 2
   Toxic To Reproduction, Category 1B
   Specific Target Organ 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.
   H331 - Toxic if inhaled.
   H301 - Toxic if swallowed.
   H311 - Toxic in contact with skin.
   H316 - Causes mild skin irritation.
   H318 - Causes serious eye damage.
   H317 - May cause an allergic skin reaction.
   H351 - Suspected of causing cancer state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard.
   H360 - May damage fertility or the unborn child.
   H370 - Causes damage to organs
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.
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P361+364 - Take off immediately all contaminated clothing and wash it before reuse.
P272 - Contaminated work clothing should not be allowed out of the workplace.
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.
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.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311 - Call a POISON CENTER/doctor/....
P322 - Specific measures see ... on this label.
P301+310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330 - Rinse mouth.
P321 - Specific treatment see ... on this label.
P302+352 - IF ON SKIN: Wash with plenty of soap and water.
P312 - Call a POISON CENTER/doctor/... if you feel unwell.
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.
P310 - Immediately call a POISON CENTER/doctor/....
P333+313 - If skin irritation or rash occurs, seek medical advice/attention.
P308+313 - IF exposed or concerned: Get medical attention/advice.

GHS Storage and Disposal Phrases:
P403+235 - Store in cool/well-ventilated place.
P501 - Dispose of contents/container to ....
P405 - Store locked up.
P403+233 - Store container tightly closed in well-ventilated place - if product is as volatile as to generate hazardous atmosphere.
2.3 **Adverse Human Health**

**Chronic:** Effects may be delayed. Laboratory experiments have shown mutagenic effects. Repeated contact may cause corneal damage. May cause adverse reproductive effects. 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. Repeated or prolonged exposure may cause CNS stimulation. 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)

**2.3.1 Inhalation:**
Causes 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. Can produce delayed pulmonary edema. 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. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May be harmful if inhaled. Vapors may cause dizziness or suffocation. 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.

**2.3.2 Skin Contact:**
Causes skin irritation. Absorption into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). 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. May cause skin irritation. May be harmful if absorbed through the skin. Prolonged and/or frequent contact may cause drying, cracking or folliculitis. 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.

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

**2.3.4 Ingestion:**
May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause hemolytic anemia. 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 central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
### Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>25085-75-0</td>
<td>Formaldehyde, polymer with 4,4'-(1-methylethylidene)bis[phenol]</td>
<td>7.7 -18.0 %</td>
<td>607-535-4 NA</td>
<td>Aquatic (C) 4: H413</td>
</tr>
<tr>
<td>80-05-7</td>
<td>4,4'-Isopropylidenediphenol</td>
<td>1.0 -3.6 %</td>
<td>201-245-8 604-030-00-0</td>
<td>Skin Sens. 1: H317 Eye Damage 1: H318 STOT (SE) 3: H335 H336 Toxic Repro. 2: H361</td>
</tr>
<tr>
<td>2807-30-9</td>
<td>Ethylene glycol monopropyl ether</td>
<td>0.1 -1.0 %</td>
<td>220-548-6 603-095-00-2</td>
<td>Acute Tox.(D) 4: H312 Eye Damage 2: H319</td>
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<tr>
<td>50-00-0</td>
<td>Formaldehyde</td>
<td>0.01 -0.1 %</td>
<td>200-001-8 605-001-00-5</td>
<td>Acute Tox.(O) 3: H301 Acute Tox.(D) 3: H311 Skin Sens. 1: H317 Skin Corr. 1B: H314 Acute Tox.(I) 3: H331 Carcinogen 2: H351</td>
</tr>
<tr>
<td>78-93-3</td>
<td>Methyl ethyl ketone</td>
<td>30.0 -60.0 %</td>
<td>201-159-0 606-002-00-3</td>
<td>Flam. Liq. 2: H225 Eye Damage 2: H319 STOT (SE) 3: H335 H336</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methanol</td>
<td>15.0 -45.0 %</td>
<td>200-659-6 603-001-00-X</td>
<td>Flam. Liq. 2: H225 Acute Tox.(O) 3: H301 Acute Tox.(D) 3: H311 Acute Tox.(I) 3: H331 STOT (SE) 1: H370</td>
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<tr>
<td>107-98-2</td>
<td>2-Propanol, 1-Methoxy-</td>
<td>3.0 -10.0 %</td>
<td>203-539-1 603-064-00-3</td>
<td>Flam. Liq. 3: H226 STOT (SE) 3: H335 H336</td>
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<tr>
<td>872-50-4</td>
<td>N-Methyl-2-pyrrolidone</td>
<td>1.0 -5.0 %</td>
<td>212-828-1 606-021-00-7</td>
<td>Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336 Toxic Repro. 1B: H360</td>
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<tr>
<td>8047-99-2</td>
<td>Toluene ethylsulfonamide</td>
<td>1.0 -5.0 %</td>
<td>232-465-2 NA</td>
<td></td>
</tr>
</tbody>
</table>
Section 4. First Aid Measures

4.1 Description of First Aid Measures:

In Case of Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If inhaled, remove to fresh air. Remove victim to fresh air. If not breathing give artificial respiration. Get medical aid immediately.

In Case of Skin Contact: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Flush with copious amounts of water for at least 15 minutes.

In Case of Eye Contact: Get medical aid. Flush skin with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. 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. Get medical aid immediately.

In Case of Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid. Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs naturally, have victim lean forward. Wash out mouth with water provided person is conscious. Call a physician immediately. Do NOT induce vomiting. If swallowed, do not induce vomiting unless directed to do so by medical personnel.

4.2 Important Symptoms and Effects, Both Acute and Delayed:

Gastrointestinal disturbances. May cause convulsions.

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. Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam. For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

5.2 Flammable Properties and Hazards:

Flash Pt: > -7.00     Method Used: Estimate
Explosive Limits: LEL: UEL:
Autoignition Pt: 

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust
explosion. 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. Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. Combustible liquid and vapor.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:
Use proper personal protective equipment as indicated in Section 8.

6.2 Environmental Precautions:
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. 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. Avoid runoff into storm sewers and ditches which lead to waterways. A vapor suppressing foam may be used to reduce vapors.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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. User Exposure: Avoid prolonged or repeated exposure. Do not breathe dust. Use only in a well-ventilated area. Keep away from heat and flame. Avoid breathing dust, mist, or vapor.

7.2 Precautions To Be Taken in Storing:
## Section 8. Exposure Controls/Personal Protection

### 8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
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<tr>
<td>25085-75-0</td>
<td>Formaldehyde, polymer with 4,4'-(1-methylethylidene)bis[phenol]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80-05-7</td>
<td>4,4'-Isopropylidenephilphenol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2807-30-9</td>
<td>Ethylene glycol monopropyl ether</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-00-0</td>
<td>Formaldehyde</td>
<td>TWA: 2.5 mg/m³ (2 ppm)</td>
<td>TWA: 0.5 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 2.5 mg/m³ (2 ppm)</td>
<td>STEL: 1 ppm</td>
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</tr>
<tr>
<td>78-93-3</td>
<td>Methyl ethyl ketone</td>
<td>TWA: 600 mg/m³ (200 ppm)</td>
<td>TWA: 600 mg/m³ (200 ppm)</td>
<td>TWA: 600 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 899 mg/m³ (300 ppm)</td>
<td>STEL: 900 mg/m³ (300 ppm)</td>
<td>STEL: 900 mg/m³</td>
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<tr>
<td>67-56-1</td>
<td>Methanol</td>
<td>TWA: 266 mg/m³ (200 ppm)</td>
<td>TWA: 260 mg/m³ (200 ppm)</td>
<td>TWA: 260 mg/m³</td>
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<td></td>
<td></td>
<td>STEL: 333 mg/m³ (250 ppm)</td>
<td>STEL: 1300 mg/m³ (1000 ppm)</td>
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</tr>
<tr>
<td>107-98-2</td>
<td>2-Propanol, 1-Methoxy-</td>
<td>TWA: 375 mg/m³ (100 ppm)</td>
<td>TWA: 188 mg/m³ (50 ppm)</td>
<td>TWA: 375 mg/m³</td>
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<td></td>
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<td>STEL: 560 mg/m³ (150 ppm)</td>
<td>STEL: 375 mg/m³ (100 ppm)</td>
<td>STEL: 568 mg/m³</td>
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<tr>
<td>872-50-4</td>
<td>N-Methyl-2-pyrrolidone</td>
<td>TWA: 103 mg/m³ (25 ppm)</td>
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<td></td>
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<td>STEL: 309 mg/m³ (75 ppm)</td>
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</tr>
<tr>
<td>8047-99-2</td>
<td>Toluene ethylsulfonamide</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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 ventilation to keep airborne concentrations low. 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. Safety shower and eye bath. Mechanical exhaust required.

#### 8.2.2 Personal protection equipment:

**Eye Protection:** 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. Wear chemical splash goggles.

**Protective Gloves:** Wear appropriate protective gloves to prevent skin exposure. Wear appropriate gloves to prevent skin exposure.
Respiratory Equipment (Specify Type):

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. 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. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Other Protective Clothing:

Wear appropriate protective clothing to prevent skin exposure. Wear appropriate protective clothing to minimize contact with skin.

Other Protective Clothing:

Wear appropriate protective clothing to prevent skin exposure. Wear appropriate protective clothing to minimize contact with skin.

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 [X] Liquid [ ] Solid

Appearance and Odor: Dark. solvent odor.

Melting Point: -97.00 C - -24.00 C

Boiling Point: 80.00 C - 202.00 C

Flash Pt: > -7.00 Method Used: Estimate

Evaporation Rate: ~ 3.8 (BuAC=1)

Explosive Limits:

LEL:

UEL:

Vapor Pressure (vs. Air or mm Hg):

~ 84 MM_HG at 20.0 C

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

Specific Gravity (Water = 1): 0.891

Density: ~ 7.43 LB/GA

Solubility in Water: Miscible

Autoignition Pt:
9.2 Other Information
Percent Volatile: > 74.0 % by volume.

Section 10. Stability and Reactivity

10.1 Reactivity:
10.2 Stability: Unstable [ ] Stable [ X ]
10.3 Conditions To Avoid - Hazardous Reactions:
Possibility of Hazardous Reactions: Will occur [ ] Will not occur [ X ]
10.4 Conditions To Avoid - Instability:
dust generation, Excess heat, ignition sources, Incompatible materials, Light.
10.5 Incompatibility - Materials To Avoid:
Oxidizing agents, Reducing agents, Bases, DICHROMATES, ALKALI IODIDES, caustic
alkalis, Strong oxidizing agents, Strong acids, 2-propanol, acids, Acid chlorides, Acid
anhydrides, Alkali metals, isocyanates, Perchloric acid, Sulfuric acid.
10.6 Hazardous Decomposition Or Byproducts:
chlorine, Nitrogen oxides, Carbon monoxide, oxides of sulfur, Carbon dioxide,
Phosphorous oxides.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:
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)
Teratogenicity: No information available. Reproductive Effects: Mutagenicity:
Neurotoxicity: No data available.
See actual entry in RTECS for complete information.
Other Studies:
Carcinogenicity/Other Information:
CAS# 7220-79-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 61-73-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 78-93-3: Not
listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 107-98-2: Not listed by ACGIH, IARC,
NTP, or CA Prop 65. CAS# 872-50-4: 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: If released to the atmosphere, Methylene Blue will exist as both vapor and
particulate in the ambient atmosphere. Vapor-phase Methylene Blue is degraded in the
atmosphere by reaction with photochemically produced hydroxyl radicals with an
estimated half-life of about 1.9 hours. Direct photolysis in the environment may also be
possible. Particulate-phase Methylene Blue may be physically removed from the air by
wet and dry deposition.
Physical: No information available.
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 
$T_{1/2} = 2.3$ days. Oxidizes rapidly by photo-chemical reactions in air. Readily 
biodegradable meeting the 10 day window criterion. Not expected to bioaccumulate 
significantly.

If released on soil propylene glycol methyl ether would be expected to leach because it 
has a very low estimated soil adsorptivity. Based on limited data from screening tests, it 
would probably biodegrade. If released in water, the fate of propylene glycol methyl ether 
is not clear. Based on limited data from screening tests, it should be readily 
biodegradable. Propylene glycol methyl ether would not be expected to volatilize from 
water, adsorb to sediment, bioconcentrate in fish, photolyze or hydrolyze.

Physical: Propylene glycol methyl ether will react with photochemically-produced hydroxyl 
radicals in the atmosphere. Using an estimated rate constant of $1.57 \text{ cu cm/molec-sec}$ for 
this reaction, the half-life of propylene glycol methyl ether in the atmosphere is predicted 
to be $24.5$ hr. The experimentally-determined half-life of propylene glycol methyl ether 
under photochemical smog conditions was $3.1$ hr. Propylene glycol methyl ether is 
soluble in water and would be subject to wash out by rain.

Other: The Koc for propylene glycol methyl ether, estimated from molecular structure is 
0.21. No information available.

Other: Biodegradable.

12.2 Persistence and 
Degradability:

12.3 Bioaccumulative 
Potential:

12.4 Mobility in Soil:

12.5 Results of PBT and 
vPvB assessment:

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: None listed. RCRA U-Series:
CAS# 78-93-3: waste number U159 (Ignitable waste, Toxic waste). 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
Carcinogenicity, Category 2 - Warning! Suspected of causing cancer
Toxic To Reproduction, Category 1B - Danger! May damage fertility or the unborn child
Specific Target Organ 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

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 1, SUBDIVISION B: Toxic Materials (moderate LD50 values)
CLASS D, DIVISION 2, SUBDIVISION A: Very Toxic Materials (carcinogens, reproductive toxicity, etc.)
Section 16. Other Information

Revision Date: 02/04/2014

Additional Information About This Product:

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