Title 8, California Code of Regulations, Section 5194 (Hazard Communication) [http://www.dir.ca.gov/Title8/5194.html] requires employers to inform and train employees on the hazardous substances to which they may be exposed at their workplace. To comply with this requirement, County departments should acquire and maintain copies of material safety data sheets (MSDS) for each hazardous substance in their respective workplace(s) and should ensure that the MSDSs are readily accessible to employees during each work shift. MSDSs may be maintained in paper or electronic form, but must be organized such that individual data sheets can be located when needed. If employees must travel between workplaces during a work shift, the MSDSs may be kept at the primary workplace, but should be readily available in an emergency.

MSDSs are reference guides that provide information on hazardous substances including, but not limited to, health hazards, chemical and physical characteristics, first aid and safe handling procedures of the substance. MSDSs must be in English and should contain the following information:

(A) The identity used on the label, chemical and common name(s) and Chemical Abstracts Service (CAS) number(s) of the hazardous substance.

(B) Physical and chemical properties of the hazardous substance (such as vapor pressure and flash point).

(C) The physical hazards of the hazardous substance, including the potential for fire, explosion, and reactivity.

(D) The health hazards of the hazardous substance, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the substance.

(E) The potential route(s) of entry.

(F) The Cal/OSHA permissible exposure limit (PEL), ACGIH Threshold Limit Value (TLV), and any other exposure limit used or recommended by the manufacturer, importer, or employer preparing the MSDS, where available.

(G) Whether the hazardous substance is listed in the National Toxicology Program (NTP) Sixth Annual Report on Carcinogens or has been found to be a potential
carcinogen in the International Agency for Research on Cancer (IARC) Monographs, Volumes 1-53 and Supplements 1-8, or by OSHA.

(H) Any generally applicable precautions for safe handling and use which are known to the manufacturer, importer, or employer preparing the MSDS, including the appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for cleanup of spills and leaks.

(I) Any generally applicable control measures which are known to the manufacturer, importer or employer preparing the MSDS, such as appropriate engineering controls, work practices, or personal protective equipment (PPE).

(J) Emergency and first-aid procedures.

(K) The date of preparation or revision of the MSDS.

(L) The name, address and telephone number of the manufacturer, importer, employer, or other responsible party preparing or distributing the MSDS, who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.

(M) A description in lay terms, if not otherwise provided, on either a separate sheet or with the body of the information specified in this section, of the specific potential health risks posed by the hazardous substance intended to alert any person reading the information.
### Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

### Section I

**Manufacturer's Name:** XXX Chemical Company  
**Address:** 111 Main Street  
New York, NY 10012

**Emergency Telephone Number:** (204) 123-4566  
**Telephone Number for Information:** (204) 123-4522  
**Date Prepared:** January 5, 1990  
**Signature of Preparer (optional):** John Doe

### Section II — Hazardous Ingredients/Identity Information

<table>
<thead>
<tr>
<th>Hazardous Component (Specific Chemical Identity, Common Name(s))</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
<th>% (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Ethyl Ketone (2-butanone)</td>
<td>200 ppm</td>
<td>200 ppm</td>
<td>N/A</td>
<td>100%</td>
</tr>
<tr>
<td>CAS No. 78-93-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section III — Physical/Chemical Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity (g/L at 1)</td>
<td>0.8061</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point (°C)</td>
<td>87.55</td>
</tr>
<tr>
<td>Density (g/cm³ at 25°C)</td>
<td>2.5</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Appreciable = 24%</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Clear liquid with sweet odor similar to acetone</td>
</tr>
</tbody>
</table>

### Section IV — Fire and Explosion Hazard Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point (Method Used)</td>
<td>22°F</td>
</tr>
<tr>
<td>Flammable Limits (by weight)</td>
<td>In air %</td>
</tr>
<tr>
<td>LEL (lower explosive limit)</td>
<td>10</td>
</tr>
<tr>
<td>UEL (upper explosive limit)</td>
<td></td>
</tr>
<tr>
<td>Extinguishing Media</td>
<td>Use carbon dioxide or dry chemical for small fires.</td>
</tr>
<tr>
<td></td>
<td>Use alcohol-type foams for large fires.</td>
</tr>
<tr>
<td>Special Fire Fighting Procedures</td>
<td>Self-contained (NIOSH-approved) breathing apparatus and protective clothing should be used in all fires involving chemicals.</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazards</td>
<td>Vapors are heavier than air and may travel along the ground, or be moved by ventilation, and be ignited by various ignition sources.</td>
</tr>
</tbody>
</table>

(Reproduce locally)
## Section V — Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>X None</td>
</tr>
</tbody>
</table>

Incompatibility (Materials to Avoid)
- May react with oxidizing agents and/or organic peroxides. Avoid alkaline materials, mineral acids and halogens.

Hazardous Decomposition or Byproducts
- Burning can produce carbon monoxide and/or carbon dioxide.

## Section VI — Health Hazard Data

### Route(s) of Entry
- Inhalation?: Yes
- Skin?: Yes
- Ingestion?: Yes

### Health Hazards (Acute and Chronic)
- Acute LD₅₀ (oral rat) = 3,100 mg/kg. Inhalation: lung irritation, central nervous system effects (dizziness and headaches). Skin: irritation, rashes, dermatitis. Eyes: irritation, redness, pain.

### Cardiogenicity
- NTP? No
- IARC Monographs? No
- OSHA Regulated? No

### Signs and Symptoms of Exposure
- Inhalation: irritation of respiratory tract, coughing, headache, nausea. Skin: dryness, redness, rashes. Eyes: irritation, pain, conjunctivitis (redness).
- Ingestion: abdominal spasms, nausea, vomiting.

### Medical Conditions
- Generally Aggravated by Exposure: None known.
- Emergency and First Aid Procedures
  - Inhalation: move to fresh air, provide oxygen, obtain medical help. Eyes: flush with water for at least 15 minutes, obtain medical help if irritation persists. Skin: thoroughly wash affected areas with water, remove contaminated clothing, obtain medical help if irritation persists or large body areas are affected. Ingestion: give water to drink, obtain medical help.

## Section VII — Precautions for Safe Handling and Use

### Steps to Be Taken in Case Material is Released or Spilled
- Collect leaking liquid in sealable containers. Absorb spilled liquid in sand or inert absorbent and remove to a safe place. Cleanup personnel should wear protective clothing, including a self-contained respirator. Avoid contact with the skin. Remove all sources of ignition.
- Waste Disposal Method
  - Consult a licensed waste disposal service firm for disposal in accordance with all federal, state and local regulations.

### Precautions to Be Taken in Handling and Storing
- Drums must be grounded and electrically bonded to the receiving vessel while dispensing in order to avoid static sparks. Store away from oxidizing agents, heat and ignition sources. Handle small quantities in approved safety cans. Handle as a Class I flammable liquid.

### Other Precautions
- Good Personal hygiene practices should always be followed.

## Section VIII — Control Measures

### Respiratory Protection (Specify Type)
- Not required if concentration is below PEL. At higher concentrations, N100H-approved respirator with organic vapor filter should be worn.

### Ventilation
- Local Exhaust: Required for high concentrations.
- Mechanical (General): Class 1, Group D; fans must be non-sparking
- Other

### Protective Gloves
- Rubber
- Eye Protection: Chemical goggles and/or face shield.

### Other Protective Clothing or Equipment
- Eye-wash Fountains, safety showers, barrier creams, etc.

### Work/Hygiene Practices