1. Identification

Product number  TKES-130
Recommended use  Printing Inks.
Recommended restrictions  None known.

Supplier/Distributor information

Company name  PANNIER CORPORATION
Address  207 Sandusky Street
Pittsburgh, PA 15212-5823 USA
Telephone  412-323-4900
E-mail  sales@pannier.com
WWW  www.pannier.com
Emergency phone number  INFOTRAC: 24-hour telephone number: 1-800-535-5053

2. Hazard(s) identification

Physical hazards  Flammable liquids  Category 2
Health hazards  Serious eye damage/eye irritation  Category 2A
Specific target organ toxicity, single exposure  Category 3 narcotic effects

OSHA defined hazards  Not classified.

Label elements

Signal word  Danger
Hazard statement  Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.
Precautionary statement

Prevention  Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.
Response  If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.
Storage  Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal  Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)  None known.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ethyl ketone</td>
<td>78-93-3</td>
<td>80-100</td>
</tr>
</tbody>
</table>
2-Pentanone  107-87-9  0-5
Ethylbenzene  100-41-4  <0.1
Other components below reportable levels  11.14

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation: 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.
Skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion: Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed: May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Suitable extinguishing media: Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical: Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions: In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards: Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up:
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions: Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

**Precautions for safe handling**
Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

**Conditions for safe storage, including any incompatibilities**
Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>PEL</td>
<td>700 mg/m3</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>PEL</td>
<td>200 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>STEL</td>
<td>150 ppm</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>STEL</td>
<td>300 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>TWA</td>
<td>530 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 ppm</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>STEL</td>
<td>885 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>590 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>STEL</td>
<td>150 ppm</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>STEL</td>
<td>300 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

**US. NIOSH: Pocket Guide to Chemical Hazards**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>TWA</td>
<td>530 mg/m3</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>STEL</td>
<td>885 mg/m3</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>590 mg/m3</td>
</tr>
</tbody>
</table>

**Biological limit values**

**ACGIH Biological Exposure Indices**

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>2 mg/l</td>
<td>MEK</td>
<td>Urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

**Appropriate engineering controls**
Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other
Respiratory protection: Wear suitable protective clothing.
Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards: Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations: When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties
Appearance
- Physical state: Liquid.
- Form: Liquid.
- Color: Black.
Odor: Characteristic.
Odor threshold: Not available.
pH: Not available.
Melting point/freezing point: Not available.
Initial boiling point and boiling range: 174.2 °F (79 °C)
Flash point: 24.8 °F (-4.0 °C)
Evaporation rate: Not available.
Flammability (solid, gas): Not applicable.
Upper/lower flammability or explosive limits
- Explosive limit - lower (%): 1.8 % v/v
- Explosive limit - upper (%): 11.5 % v/v
Vapor pressure: 105 hPa (79 mm Hg)
Vapor density: Not available.
Relative density: Not available.
Solubility(ies)
- Solubility (water): Partly miscible.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.
Other information
- Density: 0.84 g/cm3
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

10. Stability and reactivity
Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability: Material is stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials: Strong oxidizing agents. Strong acids.
Hazardous decomposition products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.
11. Toxicological information

Information on likely routes of exposure

**Inhalation**
May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.

**Skin contact**
No adverse effects due to skin contact are expected.

**Eye contact**
Causes serious eye irritation.

**Ingestion**
May cause discomfort if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**
May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

**Acute toxicity**
Narcotic effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td>6500 mg/kg</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Respiratory or skin sensitization**

- **Respiratory sensitization**
  Not a respiratory sensitizer.
- **Skin sensitization**
  This product is not expected to cause skin sensitization.
- **Germ cell mutagenicity**
  No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- **Carcinogenicity**
  This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Not listed.

**Reproductive toxicity**
This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**
May cause drowsiness and dizziness.

**Specific target organ toxicity - repeated exposure**
Not classified.

**Aspiration hazard**
Not an aspiration hazard.

**Chronic effects**
Prolonged inhalation may be harmful.

12. Ecological information

**Ecotoxicity**
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**
No data is available on the degradability of this product.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Partition coefficient n-octanol / water (log Kow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
</tr>
</tbody>
</table>

**Mobility in soil**
The product is partly miscible with water and may spread in the aquatic environment.

**Other adverse effects**
None known.

13. Disposal considerations

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.
Hazardous waste code

D001: Waste Flammable material with a flash point <140 F
D035: Waste Methyl ethyl ketone
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number: UN1210
UN proper shipping name: Printing ink, flammable
Transport hazard class(es):
- Class: 3
- Subsidiary risk:
- Label(s): 3
Packing group: II
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
Special provisions: 149, IB2, T4, TP1, TP8
Packaging exceptions: 150
Packaging non bulk: 173
Packaging bulk: 242

IATA

UN number: UN1210
UN proper shipping name: Printing ink flammable
Transport hazard class(es):
- Class: 3
- Subsidiary risk:
- Packing group: II
Environmental hazards: No.
ERG Code: 3L
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number: UN1210
UN proper shipping name: PRINTING INK FLAMMABLE
Transport hazard class(es):
- Class: 3
- Subsidiary risk:
- Packing group: II
Environmental hazards:
- Marine pollutant: No.
EmS: F-E, S-D
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not established.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Listed Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pentanone (CAS 107-87-9)</td>
<td>LISTED</td>
</tr>
<tr>
<td>Methyl ethyl ketone (CAS 78-93-3)</td>
<td>LISTED</td>
</tr>
</tbody>
</table>
Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
- Immediate Hazard - Yes
- Delayed Hazard - No
- Fire Hazard - Yes
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number
Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number
Methyl ethyl ketone (CAS 78-93-3) 6714

US state regulations

US. Massachusetts RTK - Substance List
2-Pentanone (CAS 107-87-9)
Methyl ethyl ketone (CAS 78-93-3)

US. New Jersey Worker and Community Right-to-Know Act
Methyl ethyl ketone (CAS 78-93-3)

US. Pennsylvania Worker and Community Right-to-Know Law
2-Pentanone (CAS 107-87-9)
Methyl ethyl ketone (CAS 78-93-3)

US. Rhode Island RTK
Methyl ethyl ketone (CAS 78-93-3)

US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

US. California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Ethylbenzene (CAS 100-41-4)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
</tbody>
</table>
Country(s) or region | Inventory name | On inventory (yes/no)*
--- | --- | ---
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

*A “Yes” indicates this product complies with the inventory requirements administered by the governing country(s).
A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

<table>
<thead>
<tr>
<th>Issue date</th>
<th>07-July-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>-</td>
</tr>
<tr>
<td>Version #</td>
<td>01</td>
</tr>
<tr>
<td>HMIS® ratings</td>
<td>Health: 2</td>
</tr>
<tr>
<td></td>
<td>Flammability: 3</td>
</tr>
<tr>
<td></td>
<td>Physical hazard: 0</td>
</tr>
<tr>
<td>NFPA ratings</td>
<td></td>
</tr>
</tbody>
</table>

Disclaimer

REA Elektronik Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.