SAFETY DATA SHEET

1. Identification

Product identifier Filter, Activated Carbon & Potassium Permanganate

Other means of identification

Product code 0169

Recommended use Tissue-Tek® Accu-Edge® Grossing Stations

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Sakura Finetek USA Inc.

Address 1750 West 214th St.

Torrance, CA 90501

Telephone 1-310-972-7800

Emergency phone number CHEMTREC: 1-800-424-9300

Email SDSsupport@sakuraus.com

2. Hazard(s) identification

Physical hazards Oxidizing solids Category 2

Health hazards

Skin corrosion/irritation Category 1C

Serious eye damage/eye irritation Category 1

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards Combustible dust

Label elements

Signal word Danger

Hazard statement May intensify fire; oxidizer. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects. May form combustible dust concentrations in air.

Precautionary statement

Prevention Keep away from heat. Keep/Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Do not breathe dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. 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. Immediately call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage Store in a well-ventilated place. 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.

Supplemental information None.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated carbon</td>
<td>7440-44-0</td>
<td>&gt;75</td>
</tr>
<tr>
<td>Potassium permanganate</td>
<td>7722-64-7</td>
<td>6-8</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless otherwise indicated.

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: IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact: Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Coughing.

Most important symptoms/effects, acute and delayed: Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed: Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media: Apply extinguishing media carefully to avoid creating airborne dust.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Greatly increases the burning rate of combustible materials. Containers may explode when heated. 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: May form combustible dust concentrations in air. May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. Wear appropriate protective equipment and clothing during clean-up. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for 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.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles.

Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Avoid exposure to water and contaminated air, otherwise the media is rendered useless. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate (CAS 7722-64-7)</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated carbon (CAS 7440-44-0)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated carbon (CAS 7440-44-0)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Potassium permanganate (CAS 7722-64-7)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.02 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated carbon (CAS 7440-44-0)</td>
<td>TWA</td>
<td>2.5 mg/m³</td>
<td>Respirable.</td>
</tr>
</tbody>
</table>
US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate</td>
<td>STEL</td>
<td>3 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>(CAS 7722-64-7)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

**Biological limit values**
No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**
Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high. 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. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**
- **Eye/face protection**
  Wear safety glasses with side shields (or goggles) and a face shield. Use tight fitting goggles if dust is generated.
- **Skin protection**
  - **Hand protection**
    Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Frequent change is advisable.
- **Skin protection**
  - **Other**
    Wear appropriate chemical resistant clothing.
- **Respiratory protection**
  If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
- **Thermal hazards**
  Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**
Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. When using, do not eat, drink or 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**
  Solid.
- **Form**
  Granules.
- **Color**
  Purple.
- **Odor**
  Odorless.
- **Odor threshold**
  Not available.
- **pH**
  Not available.
- **Melting point/freezing point**
  Not available.
- **Initial boiling point and boiling range**
  Not available.
- **Flash point**
  Not available.
- **Evaporation rate**
  Not available.
- **Flammability (solid, gas)**
  Oxidizer.

**Upper/lower flammability or explosive limits**
- **Flammability limit - lower (%)**
  Not available.
- **Flammability limit - upper (%)**
  Not available.
- **Explosive limit - lower (%)**
  Not available.
- **Explosive limit - upper (%)**
  Not available.
- **Vapor pressure**
  Not available.
- **Vapor density**
  Not available.
- **Relative density**
  0.7
Solubility(ies)

Solubility (water)  
KMnO₄ yes, Molecular sieve, no

Partition coefficient  
(n-octanol/water)  
Not available.

Auto-ignition temperature  
Not available.

Decomposition temperature  
Not available.

Viscosity  
Not available.

Other information

Density  
44.00 - 46.00 lb/ft³

Explosive properties  
Not explosive.

Oxidizing properties  
May intensify fire; oxidizer.

10. Stability and reactivity

Reactivity  
Greatly increases the burning rate of combustible materials.

Chemical stability  
Material is stable under normal conditions.

Possibility of hazardous reactions  
Contact with combustible material may cause fire.

Conditions to avoid  
Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation. High humidity.

Incompatible materials  

Hazardous decomposition products  
No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation  
May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact  
Causes severe skin burns.

Eye contact  
Causes serious eye damage.

Ingestion  
Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics  
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Dusts may irritate the respiratory tract, skin and eyes. May cause respiratory irritation. Coughing.

Information on toxicological effects

Acute toxicity  
Causes burns.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated carbon (CAS 7440-44-0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>&gt; 10000 mg/kg</td>
</tr>
<tr>
<td>Potassium permanganate (CAS 7722-64-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>750 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causes severe skin burns.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causes serious eye damage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td></td>
<td>Not a respiratory sensitizer.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td></td>
<td>This product is not expected to cause skin sensitization.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td>This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.</td>
</tr>
</tbody>
</table>
This product is not expected to cause reproductive or developmental effects. May cause respiratory irritation. Not classified. Not an aspiration hazard. Prolonged inhalation may be harmful.

Very toxic to aquatic life with long lasting effects. No data is available on the degradability of this product. No data available. No data available. No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations. The waste code should be assigned in discussion between the user, the producer and the waste disposal company. 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). 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.

DOT

UN number: UN1490
UN proper shipping name: Potassium permanganate
Transport hazard class(es): 5.1
Class: Subsidiary risk: Label(s): Packing group: Environmental hazards: Marine pollutant: Special precautions for user: Read safety instructions, SDS and emergency procedures before handling. Special provisions: IB8, IP2, IP4, T3, TP33 Packaging exceptions: 152 Packaging non bulk: 212 Packaging bulk: 240

IATA

UN number: UN1490
UN proper shipping name: Potassium permanganate
Transport hazard class(es): 5.1
**Subsidiary risk** -
**Packing group** II
**Environmental hazards** Yes
**ERG Code** 5L

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

- **UN number** UN1490
- **UN proper shipping name** POTASSIUM PERMANGANATE
- **Class** 5.1
- **Subsidiary risk** -
- **Packing group** II
- **Marine pollutant** Yes
- **EmS** F-H, S-Q

**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**

**General information** IMDG Regulated Marine Pollutant.

**15. Regulatory information**

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

- **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
  Not regulated.
  Not listed.
- **CERCLA Hazardous Substance List (40 CFR 302.4)**
  Not listed.

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

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

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical**

Yes

**SARA 313 (TRI reporting)**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate</td>
<td>7722-64-7</td>
<td>6-8</td>
</tr>
</tbody>
</table>

**Other federal regulations**

- **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
  Potassium permanganate (CAS 7722-64-7)
- **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
  Not regulated.

**Safe Drinking Water Act (SDWA)**

- **Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**
  Potassium permanganate (CAS 7722-64-7) 6579
- **Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**
  Potassium permanganate (CAS 7722-64-7) 15 %WT
## DEA Exempt Chemical Mixtures Code Number

Potassium permanganate (CAS 7722-64-7) 6579

### US state regulations

#### US. Massachusetts RTK - Substance List
Potassium permanganate (CAS 7722-64-7)

#### US. New Jersey Worker and Community Right-to-Know Act
Activated carbon (CAS 7440-44-0)
Potassium permanganate (CAS 7722-64-7)

#### US. Pennsylvania Worker and Community Right-to-Know Law
Potassium permanganate (CAS 7722-64-7)

#### US. Rhode Island RTK
Not regulated.

#### US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

### 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>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</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>Yes</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>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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

- **Issue date**: 3-OCT-2011
- **Revision date**: 19-AUG-2015
- **Version #**: D
- **Further information**: HMIS® is a registered trade and service mark of the American Coatings Association (ACA).
- **HMIS® ratings**
  - Health: 3
  - Flammability: 1
  - Physical hazard: 2
- **NFPA ratings**

  ![NFPA ratings](image)

### Disclaimer

Sakura Finetek USA 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.