# SAFETY DATA SHEET

PHARMCO
BY GREENFIELD GLOBAL

## 1. Identification

**Product identifier** **MEK**

**Other means of identification**

**CAS number** 78-93-3

**Synonyms** 2-Butanone ; Ethyl Methyl Ketone ; MEK ; Methyl Acetone

**Recommended use** Not available.

**Recommended restrictions** Uses other than the recommended use.

**Manufacturer/Importer/Supplier/Distributor information**

**Company Name** Greenfield Global USA Inc. (The technical data referenced below applies to products sold by Greenfield Global Inc., under the names Greenfield Global, Pharmco, and Commercial Alcohols.)

**Address** 58 Vale Road
Brookfield, CT 06804
USA

**Telephone** 203.740.3471

**Fax** 203.740.3481

**Company Name** Greenfield Global USA Inc.

**Address** 1101 Isaac Shelby Drive
Shelbyville, KY 40065
USA

**Telephone** 502.232.7600

**Emergency phone number**

**USA** CHEMTREC: +1.800.424.9300 (CCN 17213)

**International** CHEMTREC: +1.703.527.3887 (CCN 17213)

## 2. Hazard(s) identification

**Hazards for the product as sold**

| | | |
|---|---|---|
| **Physical hazards** | Flammable liquids | Category 2 |

**Hazards for the product as sold**

| | | |
|---|---|---|
| **Health hazards** | Serious eye damage/eye irritation | Category 2A |
| | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| | Specific target organ toxicity, single exposure | Category 3 narcotic effects |

**Hazards for the product as sold**

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Highly flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

**Precautionary statement**

| | |
|---|---|
| **Prevention** | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist/vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. |
| **Response** | If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish. |
| **Storage** | Keep cool. 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)** No additional hazards are known to be associated with the expected conditions of use at the time of publication. This document does not address hazards that may arise from uses not reasonably anticipated by the manufacturer.

**Supplemental information** None.

## 3. Composition/information on ingredients

**Substances**

| Chemical name | Common name and synonyms | CAS number | % |
|---|---|---|---|
| Methyl ethyl ketone | 2-Butanone<br>Ethyl Methyl Ketone<br>MEK<br>Methyl Acetone | 78-93-3 | 100 |

**Composition comments** All concentrations are in percent by weight.

## 4. First-aid measures

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. 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. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

**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.

**General information** Take off all contaminated clothing immediately. 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** Water fog. 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

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|---|---|
| **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/vapors. 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** | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.<br><br>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. 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.<br><br>Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. |
| **Environmental precautions** | 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/vapors. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| **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 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**

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

| Material | Type | Value |
|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | PEL | 590 mg/m3 |
| | | 200 ppm |

**US. ACGIH Threshold Limit Values (TLV)**

| Material | Type | Value |
|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | STEL | 150 ppm |
| | TWA | 75 ppm |

**NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended**

| Material | Type | Value |
|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | IDLH | 3000 ppm |

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

| Material | Type | Value |
|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | STEL | 885 mg/m3 |
| | | 300 ppm |
| | TWA | 590 mg/m3 |
| | | 200 ppm |

**Biological limit values**

**ACGIH Biological Exposure Indices (BEI)**

| Material | Value | Determinant | Specimen | Sampling Time |
|---|---|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | 2 mg/l | MEK | Urine | * |

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

**Exposure guidelines**

**US ACGIH Threshold Limit Values: Skin designation**

Methyl ethyl ketone (CAS 78-93-3) Danger of cutaneous absorption

**Appropriate engineering controls** Explosion-proof general and local exhaust ventilation. Good general ventilation 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 and safety shower.

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

**Eye/face protection** Chemical goggles are recommended.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Skin protection**

**Other** Wear suitable protective clothing.

**Respiratory protection** In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Appropriate respirator selection should be made by a qualified professional.

**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

**Physical state** Liquid.

**Form** Liquid.

**Color** Colorless, clear.

**Odor** Not available.

**Melting point/freezing point** -124.6 °F (-87 °C)

**Boiling point or initial boiling point and boiling range** 175.26 °F (79.59 °C)

**Flammability** Highly flammable liquid

**Upper/lower flammability or explosive limits**

**Explosive limit - lower (%)** 1.8

**Explosive limit - upper (%)** 10.1

**Flash point** 15.8 °F (-9 °C)

**Auto-ignition temperature** 759.2 °F (404 °C)

**Decomposition temperature** Property has not been measured.

| | |
|---|---|
| **pH** | Property has not been measured. |
| **Kinematic viscosity** | 0.3094 mm²/s |
| **Solubility** | |
| **Solubility (water)** | Completely soluble |
| **Partition coefficient (n-octanol/water)** | 0.29 |
| **Vapor pressure** | 95 hPa (68 °F (20 °C)) |
| **Density and/or relative density** | |
| **Density** | 0.8049 g/cm3 |
| **Relative density** | 0.805 |
| **Relative density temperature** | 68 °F (20 °C) |
| **Vapor density** | 2.41 |
| **Particle characteristics** | Not applicable, material is a liquid. |
| **Other information** | |
| **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. Amines. Ammonia. Caustics. Isocyanates. |
| **Hazardous decomposition products** | No hazardous decomposition products are known. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | May cause drowsiness or dizziness. Headache. Nausea, vomiting. May cause irritation to the respiratory system. Prolonged inhalation may be harmful. |
| **Skin contact** | Prolonged skin contact may cause temporary irritation. |
| **Eye contact** | Causes serious eye irritation. |
| **Ingestion** | May cause discomfort if swallowed. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | May cause drowsiness or dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. |

**Information on toxicological effects**

**Acute toxicity**

| Product | Species | Test Results |
|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | | |
| **Acute** | | |
| **Dermal** | | |
| LD50 | Rat | 6400 mg/kg |
| **Inhalation** | | |
| *Vapor* | | |
| LC50 | Rat | 34.5 mg/l, 4 Hours |

| Product | Species | Test Results |
|---|---|---|
| **Oral** | | |
| LD50 | Rat | 2600 mg/kg |

**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** Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**NTP Report on Carcinogens**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

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

**Specific target organ toxicity - single exposure** May cause respiratory irritation. May cause drowsiness or 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.

| Product | | Species | Test Results |
|---|---|---|---|
| Methyl ethyl ketone (CAS 78-93-3) | | | |
| **Aquatic** | | | |
| *Acute* | | | |
| Crustacea | EC50 | Daphnia magna | 5091 mg/l, 48 Hours |
| Fish | LC50 | Pimephales promelas | 3220 mg/l, 96 Hours |

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

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

0.29

**Mobility in soil** No data available.

**Other adverse effects** No data available.

## 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** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**US RCRA Hazardous Waste U List: Reference**

Methyl ethyl ketone (CAS 78-93-3) U159

| | |
|---|---|
| **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. |
| **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** | UN1193 |
| **UN proper shipping name** | Methyl ethyl ketone ( RQ = 5000 lbs) |
| **Transport hazard class(es)** | |
| **Class** | 3 |
| **Subsidiary hazard** | - |
| **Label(s)** | 3 |
| **Packing group** | II |
| **Environmental hazards** | |
| **Marine pollutant** | No. |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Special provisions** | IB2, T4, TP1 |
| **Packaging exceptions** | 150 |
| **Packaging non bulk** | 202 |
| **Packaging bulk** | 242 |

**IATA**

| | |
|---|---|
| **UN number** | UN1193 |
| **UN proper shipping name** | Methyl ethyl ketone |
| **Transport hazard class(es)** | |
| **Class** | 3 |
| **Subsidiary hazard** | - |
| **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** | UN1193 |
| **UN proper shipping name** | METHYL ETHYL KETONE |
| **Transport hazard class(es)** | |
| **Class** | 3 |
| **Subsidiary hazard** | - |
| **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 IMO instruments** 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.

**Toxic Substances Control Act (TSCA)** This substance is on the TSCA 8(b) inventory and is designated “active”.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Methyl ethyl ketone (CAS 78-93-3)

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

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

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories**
Flammable (gases, aerosols, liquids, or solids)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

**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. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Methyl ethyl ketone (CAS 78-93-3)

**US. Massachusetts RTK - Substance List**

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**

Methyl ethyl ketone (CAS 78-93-3)

**US. Rhode Island RTK**

Methyl ethyl ketone (CAS 78-93-3)

**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. For more information go to www.P65Warnings.ca.gov.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Industrial Chemicals (AICIS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply 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** 19-October-2018

**Revision date** 02-December-2025

**Version #** 02

**HMIS® ratings** Health: 2
Flammability: 3
Physical hazard: 0

**Disclaimer** This product is subject to Greenfield Global USA Inc.’s terms and conditions, which can be found at http://www.greenfield.com/tc-po-us/. Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.