SAFETY DATA SHEET

DATE ISSUED: 6/21/2015
SDS REF. No: JP5

JP-5 TURBINE FUEL, AVIATION, MIL-DTL-5624

1. PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: JP-5 Turbine Fuel, Aviation, MIL-DTL-5624
Inventory ID: JP5

Intended use: Test, Laboratory / Ground. Not Certified for Flight

COMPANY INFORMATION

MACH-DYNAMICS® Cage Code 1RRC4
494 Main Street Susquehanna, PA 18847
Phone: (570) 213-5603
Fax: (570) 213-5574
Contact: Mark Gingerella

http://www.mach-dynamics.com/

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Classification: Flammable liquids (Category 4) Carcinogenic toxicity (Category 2) Reproductive toxicity (Category 2) Specific target organ toxicity -repeated exposure (Category 2) Skin irritation (Category 2) Eye irritation (Category 2) Specific target organ toxicity -single exposure (Category 3) Aspiration hazard (Category 1)

Signal Word: DANGER

Pictogram(s)

Hazard statement(s): Combustible liquid. Harmful if swallowed. May be fatal if swallowed and enters airways. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected
of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s): Obtain special instructions before use. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Avoid release to the environment. Use personal protective equipment as required. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Do NOT induce vomiting. Collect spillage. Store in a well-ventilated place. Keep cool.

### 3. COMPOSITION/CHEMICAL INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>CAS #</th>
<th>EINECS</th>
<th>Amount %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>232-298-5</td>
<td>75 - 85</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Light</td>
<td>64742-47-8</td>
<td>265-149-8</td>
<td>15 - 25</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Middle</td>
<td>64742-46-7</td>
<td>265-148-2</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>203-777-6</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>205-563-8</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>203-892-1</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Solvent Naphtha, Petroleum, Heavy Aromatic</td>
<td>64742-94-5</td>
<td>265-198-5</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>202-049-5</td>
<td>0 - 3</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**General advice:** If exposed or concerned; get medical advice/attention. Present this SDS to the doctor in attendance.

**EYES:** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Remove contact lenses if safe to do so. Seek medical aid if irritation persists.

**SKIN:** Flush skin with soap and water while removing contaminated clothing. If irritation occurs, get medical advice/attention. Do not reuse clothing or shoes until thoroughly cleaned.

**INGESTION:** Do Not induce vomiting. If swallowed, immediately call a POISON CENTER or doctor/physician. Do not attempt to give any liquids if victim is unconscious. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
INHALATION: Immediately remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: Potential for chemical pneumonitis. Consider gastric lavage with protected airway, administration of activated charcoal.

MOST IMPORTANT SYMPTOMS AND EFFECTS BOTH ACUTE AND DELAYED

ACUTE: Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea, and loss of coordination. Continued inhalation may result in unconsciousness and death.

DELAYED: Long term or repeated exposure to this material may have effects on the central nervous system and defat the skin.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: No data available.

5. FIRE FIGHTING MEASURES

NFPA CODES

EXTINGUISHING MEDIA: Carbon dioxide, foam, AFFF, or dry powder for extinction. Use water spray to cool fire exposed containers.

UNSUITABLE EXTINGUISHING MEDIA: Water jet spray.

FIRE FIGHTING PROCEDURES: WARNING! Flammable Liquid. Clear the fire area of unprotected personnel. Do not enter confined fire space without full bunker gear; including a pressure-demand NIOSH approved SCBA. Cool fire exposed containers with water. If water is used, fog nozzles are preferred.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE: Produces oxides of carbon upon combustion.
**Additional Information:** The vapor is heavier than air, spreads along ground and distant ignition is possible. Will float and can be re-ignited on surface water. Carbon monoxide may be evolved if incomplete combustion occurs.

### 6. ACCIDENTAL RELEASE MEASURES

**Protective Measures:** WARNING. Combustible. Evacuate danger area. Ventilate area of leak or spill for at least 24 hours or until it has been declared safe. Remove all sources of ignition. Stop the leak if there is no risk involved. Clean-up personnel require protective clothing and respiratory protection from vapors. Absorb liquid with inert material. Only specially trained or qualified personnel should handle the emergency. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding all equipment.

**ENVIRONMENTAL PRECAUTIONS** Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Use appropriate containment of product and fire-fighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches, or rivers by using sand, earth, or other appropriate barriers. Notify authorities if any exposure to the general public or environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:** For large spills (> 1 drum), transfer by mechanical means such as a vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. For small spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

**Reference to other sections:** Refer to Section 8 for personal protection advice and Section 13 for disposal information.

### 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid even in the absence of sparks or flame. Extinguish pilot lights, cigarettes, and turn off all other sources of ignition prior to use, and until all vapors are gone. Keep containers tightly closed and upright to prevent leakage.

**Precautions for safe handling:** Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Ground and bond all containers during product transfer. Avoid breathing vapors or mists. Avoid contact with eyes or skin.

Use closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling. Use non-sparking hand tools. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Store in a well-ventilated place. Keep container tightly closed. Store separated from strong oxidants. Reacts violently with strong oxidants causing fire and explosion hazard.
Store locked up.
For containers or container linings, use mild steel, stainless steel. Do not use natural, butyl, neoprene or nitrile rubbers.
The vapor mixes well with air, explosive mixtures are formed easily. As a result of flow, agitation, etc., electrostatic charges can be generated.
Ensure that all local regulations regarding handling and storage facilities are followed.

**Specific end use(s):** No data available.

**COMMENTS:** KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Permissible Exposure Limits:**

<table>
<thead>
<tr>
<th></th>
<th>CAS #</th>
<th>Source 1</th>
<th>Source 2</th>
<th>BEI/Skin Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Light</td>
<td>64742-47-8</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Middle</td>
<td>64742-46-7</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>ACGIH TWA: 50 ppm</td>
<td>OSHA TWA: 500 ppm</td>
<td>BEI: 2,5-Hexanedion: 0.4 mg/L in urine [end of shift]. May be absorbed through the skin!</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>ACGIH TWA: 400 ppm</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>ACGIH TWA: 300 ppm</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
</tr>
<tr>
<td>Solvent Naphtha, Petroleum, Heavy Aromatic</td>
<td>64742-94-5</td>
<td>OSHA TWA: 500 ppm</td>
<td>N.D.</td>
<td>N.D</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>ACGIH TWA: 10 ppm;</td>
<td>OSHA TWA: 10 ppm</td>
<td>May be absorbed through the skin!</td>
</tr>
</tbody>
</table>

N.D. - No data available  
ACGIH: American Conference of Governmental Industrial Hygienists  
OSHA: U.S. Occupational Health and Safety Administration  
TWA: Time weighted average  
STEL: Short Term Exposure Limit  
BEI: Biological Exposure Indices

**EXPOSURE CONTROLS:** The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures may include the following:
Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure limits. Local exhaust ventilation is recommended. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
PERSONAL PROTECTIVE EQUIPMENT

Use personal protective equipment as required. All personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers for more information.

Hand Protection
Where hand contact with this material may occur, use gloves that meet applicable standards. Specific glove information is provided based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending upon the specific use conditions. Contact glove manufacturer for advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves.

EYES AND FACE: Use approved chemical safety/splash goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

SKIN: Chemical resistant suit including boots and gloves should be used when handling this material.

RESPIRATORY: Use only with adequate ventilation. If engineering controls do not maintain airborne concentrations at a level which is adequate to protect worker health, an approved respirator should be used. When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection. Contact respirator supplier for specific recommendations.

For situations where high concentrations of vapors may be present, use an approved supplied air respirator operated in positive pressure mode.

SPECIFIC HYGIENIC WORK PRACTICES: Do not eat, drink, or smoke when handling this material. Wash hands thoroughly after handling. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.


ENVIRONMENTAL EXPOSURE CONTROLS

Local guidelines for emissions limits for volatile substances must be observed for the discharge of exhaust air containing vapors. See Sections 6, 7, 12, and 13 for more information on environmental exposure controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Pale yellow to brown if undyed; red or purple if dyed</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>170° - 365° F</td>
</tr>
</tbody>
</table>
Flash Point: > 141° F (closed cup)
Gravity: 33 – 42 °API
Odor threshold: No data available
pH: No data available
Melting/freezing point: No data available
Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: No data available
Solubility (ies): No data available
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available

10. STABILITY AND REACTIVITY

REACTIVITY: May react violently with strong oxidants causing fire and explosion hazard.

CHEMICAL STABILITY: This material is stable under normal conditions of use. Hazardous polymerization will not occur.

POSSIBILITY OF HAZARDOUS REACTIONS: Reacts violently with strong oxidants causing fire and explosion hazard.

CONDITIONS TO AVOID: Heat, sparks, open flames, and other sources of ignition. Avoid the build-up of static electricity. The vapor mixes well with air, explosive mixtures are formed easily. As a result of flow, agitation, etc., electrostatic charges can be generated.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: In the event of fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure
Likely routes of exposure include: inhalation, eye and skin contact, and ingestion.

Signs and symptoms of exposure
Eye irritation signs and symptoms may include a burning sensation, redness, and pain.
Skin irritation signs and symptoms may include dryness and redness.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. The onset of respiratory symptoms may be delayed for several hours after exposure. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea, and loss...
of coordination. Continued inhalation may result in unconsciousness and death. Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

**Delayed and immediate effects/Chronic effects from short- and long-term exposure**

**Eye**
Contact with eyes may cause redness and pain. This material is not expected to cause serious/permanent eye damage but irritation may occur.

**Skin**
This material is not expected to cause skin corrosion but irritation may occur.

**Inhalation**
Inhalation of this material may cause: cough, dizziness, headache, sore throat, diarrhea, nausea, loss of appetite, vomiting, and unconsciousness.

**Ingestion**
Ingestion of this material may cause: abdominal pain, cough, dizziness, headache, sore throat, diarrhea, nausea, loss of appetite, vomiting, and unconsciousness.

**Chronic effects**
Long term or repeated exposure to this material may cause dermatitis.

**Subchronic effects**
This substance and vapor is irritating to the eyes, skin, and respiratory tract. The substance may cause effects on the central nervous system at high concentrations resulting in narcosis.

**Respiratory or skin sensitization**
No data available.

**Germ cell mutagenicity**
No data available.

**Reproductive toxicity**
Affects reproductive system in animals at doses which produce other toxic effects. (n-Hexane).

**Specific target organ toxicity - single exposure**

Respiratory System: Repeated exposure affects the respiratory system. Effects were seen at high concentrations only.

Central Nervous System (CNS): Repeated exposure can cause effects on the central nervous system. Effects were seen at high concentrations only.
Specific target organ toxicity - repeat exposure
Auditory System: Prolonged or repeated exposure to toluene or xylene in high concentrations may enhance hearing damage caused by exposure to noise.

Blood: May have effects on the blood resulting in chronic hemolytic anemia. (Naphthalene)
Peripheral Nervous System: Repeated exposure causes peripheral neuropathy in animals. (n-Hexane)

Aspiration hazard
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

Potential health effects
Irritating to the respiratory system. Vapors may cause drowsiness and dizziness, irritating to the eyes and skin.
Harmful: may cause lung damage if swallowed. Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details.
Target organ(s): Auditory system. Respiratory system. Visual system. Central nervous system (CNS).

Acute Toxicity Estimates

<table>
<thead>
<tr>
<th></th>
<th>CAS #</th>
<th>Test – Species - Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>Oral LD50 - Rat: &gt;5000 mg/kg; Dermal LD50 - Rabbit &gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>Oral LD50 - Rat: 25,000 mg/kg</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>Oral LD50 - Rat: &gt;5000 mg/kg; Inhalation LD50 - Rat: 103,000 mg/m3/4 Hr</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>Inhalation LD50 - Rat: 118,000 mg/L/4 Hr</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Oral LD50 - Rat: 26,000 mg/kg Dermal LC50 - Rat: &gt; 20 g/kg;</td>
</tr>
</tbody>
</table>

Carcinogenicity

IARC (International Agency for Research on Cancer):
Naphthalene, Fuel Oils residual (heavy), and Diesel Fuel (marine) are listed as: Possibly carcinogenic to humans (Group 2B).

NTP (National Toxicology Program):
Naphthalene is listed as: Reasonably anticipated to be a human carcinogen.

OSHA (U.S. Occupational Health and Safety Administration):
No components listed as a carcinogen by OSHA (29CFR 1910 Subpart Z).
12. ECOLOGICAL INFORMATION

Ecotoxicity

This material is expected to be toxic to aquatic organisms.

<table>
<thead>
<tr>
<th></th>
<th>CAS #</th>
<th>Test – Species - Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>LC 50 - Fish: 3 mg/ L / 96 Hr; EC 50 - Crustaceans: 5.3 mg/ L /48 Hr</td>
</tr>
<tr>
<td>Distillates, Petroleum Hydrotreated Light</td>
<td>64742-47-8</td>
<td>LC 50 - Fish: 2.6mg/ L / 96 Hr</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>LC 50 - Daphnia Magna: &gt;50 mg/ L / 24 Hr; LC 50 - Goldfish: 4 mg/ L / 24 Hr</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>LC 50 - Carassius Auratus: 4 mg/L / 96 Hr; LC 50 - Mysisopsis Bahia: 0.1 mg/L / 96 Hr; LC 50 - Daphnia Magna: &gt;10 mg/ L / 24 Hr</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>EC 50 - Daphnia Magna: 0.38 mg/ L/ 24 Hr</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>LC 50-Onchorhynchus Gobuscha:1.4mg/L/96 Hr; EC 50 - Pandalus Goniurus: 2.2 mg/L/96 Hr; EC 50 - Pimephales Promelas: 6.35 mg/L/48 Hr</td>
</tr>
</tbody>
</table>

Persistence and Degradability

According to National Library of Medicine's Hazardous Substances Data Bank [NLM HSDB]: The rate of degradation varies depending upon the chemical structure of the individual components. Hydrocarbons in the C5-C9 range are biodegradable only at low concentrations since at higher concentrations they exhibit membrane-solvent toxicity to soil microbes. Hydrocarbons with condensed ring structures, such as polyaromatic hydrocarbons (PAHs), and cycloalkanes are relatively resistant to biodegradation.

Bioaccumulative potential

The bioaccumulation potentials of the major components of this product range from low to high. Some higher molecular weight components may be taken up by fish and domestic animals and bioconcentrated if they persist in environmental media. [NLM HSDB]

Mobility in soil

Log Koc values for the individual components of this product have been reported to range from 1.81-4.56. Based on a classification scheme, these Koc values suggest the components of gasoline will have high to no mobility in soil. [NLM HSDB]

Other adverse effects

No data available.

13. DISPOSAL INFORMATION

Waste treatment methods Product disposal

Recover or recycle if possible. May be disposed of by controlled incineration

It is the responsibility of the waste generator to determine the physical characteristics and toxicity of the material generated in order to properly designate the waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains, or allow to enter waterways. Waste product should not be allowed to contaminate soil or water.

**Container disposal**
Follow all SDS/label precautions even after container is emptied because they may retain product residues. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through a suitable qualified or licensed contractor and in accordance with governmental regulations. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as this may cause them to explode.

**EMPTY CONTAINER:** KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.

**RCRA/EPA WASTE INFORMATION:** 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. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

### 14. TRANSPORT INFORMATION

**Note:** Non-bulk packaging of this material (<119 gallons) are not regulated by U.S. DOT.

DOT: Not Regulated. (NA 1993, Diesel Fuel, Class 3, PG-III)
IATA: UN 1202, Diesel fuel, Class 3, PG-III.
IMDG: UN 1202, Diesel fuel, Class 3, PG-III.
Transport in bulk according to Annex II MARPOL 73/78 and IBC Code
MARPOL category: X IBC, Code: 3
IMDG Marine Pollutant: Yes.
NA 1993
UN Proper shipping name: Diesel Fuel
Class: 3
Packaging Group: III

Special Precautions for the user: No data available.
ERG: 128
Special Provisions: 49 CFR 172.102: 144, B1. IB3, T4, TP1, TP29

*** MACH-DYNAMICS verifies that the material was supplied and shipped in the proper packages in accordance with DOT and federal regulations that are applicable to the mode of transportation selected. The shipper must verify that the packaging supplied is acceptable to be re-shipped in per the federal regulations applicable to the mode of transportation for re-shipment. Regulations may change depending on mode of transportation selected.***

### 15. REGULATORY INFORMATION

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA) or are exempt from reporting.
This material or all of its components are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).

N.L. – Not listed on regulatory list

**FEDERAL REGULATORY LIST**

<table>
<thead>
<tr>
<th>CAS #</th>
<th>SARA 313</th>
<th>CERCLA</th>
<th>RCRA</th>
<th>CAA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Light</td>
<td>64742-47-8</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Distillates, Petroleum, Hydrotreated Middle</td>
<td>64742-46-7</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>313</td>
<td>5,000</td>
<td>N.L.</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Solvent Naphtha, Petroleum, Heavy Aromatic</td>
<td>64742-94-5</td>
<td>N.L.</td>
<td>N.L.</td>
<td>N.L.</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>313</td>
<td>100</td>
<td>U165</td>
</tr>
</tbody>
</table>
CALIFORNIA REGULATIONS:
WARNING: This product contains substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>Type Of Toxicity</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Cancer</td>
<td>0 – 3%</td>
</tr>
</tbody>
</table>

PENNSYLVANIA REGULATIONS:

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>Listing</th>
<th>Amount %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>PA RTK</td>
<td>75 - 85</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>PA RTK</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>PA RTK</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>PA RTK</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>PA RTK</td>
<td>0 - 3</td>
</tr>
</tbody>
</table>

The following product components are cited on the Pennsylvania Special Hazardous Substances List, Pennsylvania Hazardous Substances List and/or the Pennsylvania Environmental Hazardous Substances List, and are present at levels which require reporting.

To the best of our knowledge, this product does not contain any components cited on the Pennsylvania Special Hazardous Substances List.

ADDITIONAL STATE REGULATIONS:
Components of this product are found on the following state lists.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS #</th>
<th>State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates</td>
<td>8002-05-9</td>
<td>FL, MA</td>
</tr>
<tr>
<td>Hexane</td>
<td>110-54-3</td>
<td>DE, FL, IL, MA, NJ, NY, RI, WI</td>
</tr>
<tr>
<td>Heptane</td>
<td>142-82-5</td>
<td>FL, MA, NJ, RI</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>FL, MA, NJ, RI, WI</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>DE, FL, MA, NJ, NY, RI, WI</td>
</tr>
</tbody>
</table>

CHEMICAL SAFETY ASSESSMENT: No data available.

16. OTHER INFORMATION

APPROVED BY: Mark Gingerella
TITLE: President / QC Manager

<table>
<thead>
<tr>
<th>HMIS RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health:</td>
</tr>
<tr>
<td>Flammability:</td>
</tr>
<tr>
<td>Reactivity:</td>
</tr>
<tr>
<td>Personal Protection:</td>
</tr>
</tbody>
</table>

*TBD by actual use conditions and environment.

DISCLAIMER: To the best of MACH-DYNAMICS knowledge, all information, recommendations, and suggestions appearing herein concerning this product are taken from sources or based upon data believed to be reliable. Although reasonable care has been taken in the preparation of this information, MACH-DYNAMICS extends no warranties or guarantees, express or implied, makes no representations and assumes no responsibility as to the accuracy, reliability or completeness of the information presented. MACH-DYNAMICS assumes no liability arising out of the use of the product by others.

The conditions or methods of handling, storage, use and disposal of the product are beyond MACH-DYNAMICS control. The information provided herein may not be valid for this product if it is used in combination with any other materials or process. It is the user’s responsibility to determine the suitability of the product, review the information provided herein, assess the safety and toxicity of the product and to comply with all applicable laws and regulations. For this and other reasons, MACH-DYNAMICS does not assume responsibility and expressly disclaims liability for any loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.