



SDS-2009

SAFETY DATA SHEET

Section 1. Product and Company Identification

Product Name: FIM-FAME-6 Mixture
Product Number(s): 2009
Source: Synthetic or plant
Product Use: This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives.

Matreya LLC
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800-424-9300 (within United States) **703-527-3887** (International)

Section 2. Hazards Identification

Emergency Overview:
Target Organs: Respiratory system, central nervous system, blood, heart, skin
GHS Classification: Flammable liquids, Category 2
 Skin Irritation, Category 2
 Aspiration hazard, Category 1
 Specific target organ toxicity - single exposure, Category 3
 Acute toxicity to the aquatic environment, Category 1
 Chronic toxicity to the aquatic environment, Category 1

GHS Label Elements:
Pictogram(s):



Signal Word: **Danger**

Health Code
 H225
 H315
 H304
 H335
 H336
 H400
 H410

Hazard statement(s):
 Highly flammable liquid and vapor.
 Causes skin irritation.
 May be fatal if swallowed and enters airways.
 May cause respiratory irritation; or
 May cause drowsiness or dizziness.
 Very toxic to aquatic life.
 Very toxic to aquatic life with long lasting effects.

| | |
|------------------------|--|
| Prevention Code | Prevention Statement(s): |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. –No smoking |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting/equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| P264 | Wash skin thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P281 | Use personal protective equipment as required. |
| Response Code | Response Statement(s): |
| P305, P351, P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P331 | Do NOT induce vomiting. |
| P302, P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P321 | Specific treatment (see supplemental first aid instructions). |
| P332, P313 | If skin irritation occurs: Get medical advice/attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P301, P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P303, P361, P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P370, P378 | In case of fire: Use dry chemical, appropriate foam, or carbon dioxide; water spray for extinction. |
| P312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| P304, P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P391 | Collect spillage. |
| Storage Code | Storage Statement(s): |
| P405 | Store locked up. |
| P403, P235 | Store in a well-ventilated place. Keep cool. |
| P403, P233 | Store in a well-ventilated place. Keep container tightly closed. |
| Disposal Code | Disposal Statement(s): |
| P501 | Disposal of contents/container in accordance to local/regional/national/international regulation. |

Section 3. Composition/Information on Ingredients

| Product Name | CAS Number | Percent |
|---|------------|---------|
| Heptane | 142-82-5 | 95.4 |
| Methyl butyrate | 623-42-7 | .14% |
| Methyl hexanoate | 106-70-7 | .14% |
| Methyl octanoate | 111-11-5 | .14% |
| Methyl decanoate | 110-42-9 | .14% |
| Methyl undecanoate | 1731-86-8 | .14% |
| Methyl dodecanoate | 111-82-0 | .14% |
| Methyl tridecanoate | 1731-88-0 | .14% |
| Methyl tetradecanoate | 124-10-7 | .14% |
| Methyl tetradecenoate (<i>cis</i> -9) | 56219-06-8 | .14% |
| Methyl pentadecanoate | 7132-64-1 | .14% |
| Methyl pentadecenoate (<i>cis</i> -10) | 90176-52-6 | .14% |
| Methyl hexadecanoate | 112-39-0 | .14% |
| Methyl hexadecenoate (<i>cis</i> -9) | 1120-25-8 | .28% |
| Methyl heptadecanoate | 1731-92-6 | .14% |

| | | |
|--|------------|------|
| Methyl heptadecenoate (<i>cis</i> -10) | 75190-82-8 | .14% |
| Methyl octadecanoate | 112-61-8 | .14% |
| Methyl octadecenoate (<i>trans</i> -9) | 1937-62-8 | .14% |
| Methyl octadecenoate (<i>cis</i> -9) | 112-62-9 | .14% |
| Methyl octadecadienoate (all <i>cis</i> -9,12) | 112-63-0 | .14% |
| Methyl eicosanoate | 1120-28-1 | .14% |
| Methyl octadecatrienoate (all <i>cis</i> -6,9,12) | 16326-32-2 | .14% |
| Methyl eicosenoate (<i>cis</i> -11) | 2390-09-2 | .14% |
| Methyl octadecatrienoate (all <i>cis</i> -9,12,15) | 301-00-8 | .14% |
| Methyl eicosadienoate (all <i>cis</i> -11,14) | 2463-02-7 | .14% |
| Methyl docosanoate | 929-77-1 | .14% |
| Methyl eicosatrienoate (all <i>cis</i> -8,11,14) | 21061-10-9 | .14% |
| Methyl docosenoate (<i>cis</i> -13) | 1120-34-9 | .14% |
| Methyl eicosatrienoate (all <i>cis</i> -11,14,17) | 82729-72-4 | .14% |
| Methyl eicosatetraenoate (all <i>cis</i> -5,8,11,14) | 2566-89-4 | .14% |
| Methyl docosadienoate (all <i>cis</i> -13,16) | 61012-47-3 | .14% |
| Methyl tetracosenoate (<i>cis</i> -15) | 2733-88-2 | .14% |
| Methyl docosaheptaenoate (all <i>cis</i> -4,7,10,13,16,19) | 2566-90-7 | .14% |

Inhalation:

Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Consult a physician.

Skin:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Consult a physician. Thoroughly wash or discard clothing and shoes before reuse.

Eyes:

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

Ingestion:

If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

Suitable extinguishing media:

Use dry chemical, appropriate foam, or carbon dioxide; water spray.

Specific hazards arising from the chemical:

Extremely flammable in presence of open flames, sparks, and static discharge.

Special protective actions for fire fighters:

Evacuate area and fight fire from a safe distance. Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Special protective equipment for fire fighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

Section 6. Accidental Release Measures

Personal precautions:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate personal protective equipment.

Environmental precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewer. Inform the relevant authorities if the product has caused environmental pollution (sewer, waterways, soil or air).

Methods and Materials for containment and cleaning up:

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Prevent entry into sewers, water sources, basements or confined spaces. Contain and collect spillage with non-combustible, absorbent material and place in container for disposal according to local regulations. Do not touch spilled material. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the SDS and with local authorities.

Section 7. Handling and Storage**Precautions for safe handling:**

Avoid contact with eyes, skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Store and use away from heat, sparks, open flame or any other ignition source. Keep sealed when not in use. Wear appropriate personal protective equipment.

Conditions for safe storage, including incompatibilities:

Recommended storage temperature: -20°C. Store in a tightly closed container. Separate from oxidizing materials.

Section 8. Exposure Controls/Personal Protection

| Product Name | CAS Number | Type | Exposure Limits | Source |
|--------------|------------|-----------|------------------------|-------------|
| Heptane | 142-82-5 | TWA (8Hr) | 400 ppm | USA (ACGIH) |
| | | TWA (8Hr) | 500 ppm | USA (OSHA) |
| | | TWA | 400 ppm | Australia |
| | | TWA | 400 ppm | Belgium |
| | | VME | 500 ppm | France |
| | | MAK | 2100 mg/m ³ | Germany |
| | | TWA | 2000 mg/m ³ | Hungary |
| | | OEL | 200 ppm | Japan |
| | | TWA | 400 ppm | Korea |
| | | MAC-TGG | 1200 mg/m ³ | Netherlands |
| | | TWA | 400 ppm | New Zealand |
| | | TWA | 200 ppm | Sweden |
| | | MAK | 400 ppm | Switzerland |
| | | TWA | 500 ppm | UK |

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal Protective Equipment:**Respiratory protection:**

Use only in a well ventilated area. Wear an appropriate NIOSH/MSHA approved air-purifying respirator. If warranted, wear a positive pressure air-supplied respirator in situations where there may be potential for airborne exposure.

Hand protection:

Chemical-resistant, impervious gloves should be worn at all times when handling chemical products. Recommended: Nitrile rubber

Eye protection:

Safety eyewear should be worn at all times to avoid exposure to liquid splashes, mists or dusts. Recommended: Splash goggles

Skin protection:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. Recommended: Lab coat

Section 9. Physical and Chemical Properties

| | |
|------------------------|--------------------|
| Appearance: | Liquid |
| Odor: | Gasoline-like odor |
| Odor threshold: | No data available |
| PH: | No data available |

| | |
|---|--------------------------|
| Melting/Freezing point: | -91°C (-131°F) |
| Initial boiling point and boiling range: | 98°C (209°F) |
| Flash point: | -4.0°C (25°F)-closed cup |
| Evaporation rate (Butyl acetate = 1): | No data available |
| Upper/Lower flammability or explosive limit: | LEL 1.05% UEL 6.7% |
| Vapor pressure (72°C): | 40 mmHg |
| Vapor density (Air=1): | 3.5 |
| Relative density: | 0.68 |
| Solubility (ies): | No data available |
| Partition coefficient (n-octanol/water): | Log Pow: >300 |
| Auto-ignition temperature: | 222°C (433°F) |
| Decomposition temperature: | No data available |
| Viscosity: | No data available |

Section 10. Stability and Reactivity

Reactivity:

Stable under recommended storage conditions.

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reaction:

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:

Avoid excessive heat for prolonged periods of time. Avoid all possible sources of ignition (spark or flame).

Incompatible materials:

Avoid strong oxidizing substances.

Hazardous decomposition products:

Carbon oxides (CO, CO₂), water

Section 11. Toxicological Information

Acute toxicity:

Heptane

LC50: Inhalation - Rat - 10 gm/m³ @ 4 hour exposure time

LD50: Oral - Rat – No data available

Skin corrosion / irritation:

No data available

Serious eye damage / irritation:

Eyes - rabbit – No data available

Respiratory or skin sensitization:

No sensitization information affects known.

Germ cell mutagenicity:

Heptane is not expected to cause mutagenic affects in humans.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

Heptane is not expected to cause adverse effects in humans.

Specific target organ toxicity - single exposure:

Category 1 single exposure may cause damage to respiratory system, central nervous system or skin.

Specific target organ toxicity - repeated exposure:

No data available

Aspiration hazard:

May be fatal if swallowed and enters airways.

Section 12. Ecological Information

| | | | | |
|------------------|------|------------------------------|----------|------|
| Toxicity: | LC50 | Tilapia mossambica | 375 mg/l | 96 h |
| Fish | LC50 | Carassius auratus (goldfish) | 4 mg/l | 24 h |
| | EC50 | Daphnia magna (Water flea) | 1.5 mg/l | 48 h |

Persistence and degradability:

The substance is readily biodegradable. Expected to degrade rapidly in air.

Bioaccumulative potential:

Indication of bioaccumulation.

Mobility in soil:

No data available

Other adverse effects:

This material is expected to be toxic to aquatic life. Should not be released into the environment.

Section 13. Disposal Consideration

Disposal methods:

Observe all federal, state, and local environmental regulations.

Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation Information

Transportation quantity: This item shipped as an excepted quantity.

DOT (US)

| | |
|---|----------|
| UN Number: | 1206 |
| UN Proper shipping name: | Heptanes |
| Transportation hazard class(es): | 3 |
| Packaging group (if applicable): | II |
| Marine pollutant: | No |

Land Transport ADR/RID

| | |
|---|----------|
| UN Number: | 1206 |
| UN Proper shipping name: | Heptanes |
| Transportation hazard class(es): | 3 |
| Packaging group (if applicable): | II |
| Marine pollutant: | No |

Maritime Transport IMDG

| | |
|---|----------|
| UN Number: | 1206 |
| UN Proper shipping name: | Heptanes |
| Transportation hazard class(es): | 3 |
| Packaging group (if applicable): | II |
| Marine pollutant: | No |

Air Transport ICAO/IATA

| | |
|---|----------|
| UN Number: | 1206 |
| UN Proper shipping name: | Heptanes |
| Transportation hazard class(es): | 3 |
| Packaging group (if applicable): | II |
| Marine pollutant: | No |

Section 15. Regulatory Information

DSL/NDSL status:

This product contains the following components that are on the Canadian NDSL list.

| Component | CAS Number |
|--|------------|
| Methyl undecanoate | 1731-86-8 |
| Methyl tridecanoate | 1731-88-0 |
| Methyl heptadecanoate | 1731-92-6 |
| Methyl eicosanoate | 1120-28-1 |
| Methyl docosanoate | 929-77-1 |
| Methyl docosenoate (<i>cis</i> -13) | 1120-34-9 |
| Methyl eicosatetraenoate (all <i>cis</i> -5,8,11,14) | 2566-89-4 |

This product contains the following components that are on the Canadian DSL list.

| Component | CAS Number |
|--|------------|
| Heptane | 142-82-5 |
| Methyl butyrate | 623-42-7 |
| Methyl hexanoate | 106-70-7 |
| Methyl octanoate | 111-11-5 |
| Methyl decanoate | 110-42-9 |
| Methyl dodecanoate | 111-82-0 |
| Methyl tetradecanoate | 124-10-7 |
| Methyl pentadecanoate | 7132-64-1 |
| Methyl hexadecanoate | 112-39-0 |
| Methyl octadecanoate | 112-61-8 |
| Methyl octadecanoate (<i>trans</i> -9) | 1937-62-8 |
| Methyl octadecadienoate (all <i>cis</i> -9,12) | 112-63-0 |
| Methyl octadecatrienoate (all <i>cis</i> -9,12,15) | 301-00-8 |

TSCA

This product contains the following components that are listed on the TSCA inventory.

| Component | CAS Number |
|--|------------|
| Heptane | 142-82-5 |
| Methyl butyrate | 623-42-7 |
| Methyl hexanoate | 106-70-7 |
| Methyl octanoate | 111-11-5 |
| Methyl decanoate | 110-42-9 |
| Methyl dodecanoate | 111-82-0 |
| Methyl tetradecanoate | 124-10-7 |
| Methyl pentadecanoate | 7132-64-1 |
| Methyl hexadecanoate | 112-39-0 |
| Methyl octadecanoate | 112-61-8 |
| Methyl octadecanoate (<i>trans</i> -9) | 1937-62-8 |
| Methyl octadecadienoate (all <i>cis</i> -9,12) | 112-63-0 |
| Methyl octadecatrienoate (all <i>cis</i> -9,12,15) | 301-00-8 |
| Methyl undecanoate | 1731-86-8 |
| Methyl tridecanoate | 1731-88-0 |
| Methyl heptadecanoate | 1731-92-6 |
| Methyl eicosanoate | 1120-28-1 |
| Methyl docosanoate | 929-77-1 |
| Methyl docosenoate (<i>cis</i> -13) | 1120-34-9 |
| Methyl eicosatetraenoate (all <i>cis</i> -5,8,11,14) | 2566-89-4 |

Massachusetts Right To Know Components:

| Component | CAS Number |
|-----------|------------|
| Heptane | 142-82-5 |

New Jersey Right To Know Components:

| Component | CAS Number |
|------------------|-------------------|
| Heptane | 142-82-5 |

Pennsylvania Right To Know Components:

| Component | CAS Number |
|------------------|-------------------|
| Heptane | 142-82-5 |

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer.

| Component | CAS Number |
|------------------|-------------------|
| Heptane | 142-82-5 |

Section 16. Other Information

Manufacturer Supplementary Notes:

The statements contained herein are based upon technical data that MATREYA LLC believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. MATREYA LLC MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. MATREYA LLC ASSUMES NO LIABILITY FOR ANY USE OF THESE CHEMICALS BY THE END USER.

| | | |
|--------------------------|------------|---|
| Revision Summary: | 10/12/2014 | Version 1: New |
| | 04/24/2014 | Version 2: Revised product use statement. |
| | 03/30/2015 | Version 3: Changed company address. |
| | 8/8/2017 | Version 4: Removed Chemtrec International number. |
| | 9/23/2019 | Version 5: Reviewed, no changes. |
| | 04/01/2020 | Version 6: Updated logo, added Chemtrec International number. |

Reference:

Centers for Disease Control and Prevention. "Heptane RTECS." National Institute for Occupational Safety and Health. 2011. July 12, 2011. <<http://www.cdc.gov/niosh-rtecs/MN8D8678.html>>.

Kegley, S.E., Hill, B.R., Orme S., Choi A.H., "PAN Pesticide Database." Pesticide Action Network, North America (San Francisco, CA, 2010), <http://www.pesticideinfo.org>.