



SDS-4210

## SAFETY DATA SHEET

### Section 1. Product and Company Identification

**Product Name:** KEL-FIM-FAME-5 Mixture  
**Product Number(s):** 4210  
**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  
 2178 High Tech Road, State College, PA 16803  
 Tel: 800-342-3595/814-355-1030  
 Fax: 814-355-1031  
 Email: customerservice@matreya.com  
 Web: www.matreya.com

**24 Hour Emergency Number:** Chemtrec  
**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 Highly flammable liquid and vapor.  
 H315 Causes skin irritation.  
 H304 May be fatal if swallowed and enters airways.  
 H335 May cause respiratory irritation; or  
 H336 May cause drowsiness or dizziness.  
 H400 Very toxic to aquatic life.  
 H410 Very toxic to aquatic life with long lasting effects.

<b>Prevention Code</b>	<b>Prevention Statement(s):</b>
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.
<b>Response Code</b>	<b>Response Statement(s):</b>
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.
<b>Storage Code</b>	<b>Storage Statement(s):</b>
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.
<b>Disposal Code</b>	<b>Disposal Statement(s):</b>
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	97.78%
Methyl octanoate	111-11-5	.04%
Methyl decanoate	110-42-9	.07%
Methyl dodecanoate	111-82-0	.14%
Methyl tridecanoate	1731-88-0	.07%
Methyl tetradecanoate	124-10-7	.07%
Methyl tetradecenoate ( <i>cis</i> -9)	56219-06-8	.04%
Methyl pentadecanoate	7132-64-1	.04%
Methyl hexadecanoate	112-39-0	.29%
Methyl hexadecenoate ( <i>cis</i> -9)	1120-25-8	.14%
Methyl heptadecanoate	1731-92-6	.07%
Methyl octadecanoate	112-61-8	.14%
Methyl octadecenoate ( <i>trans</i> -9)	1937-62-8	.06%
Methyl octadecenoate ( <i>cis</i> -9)	112-62-9	.43%
Methyl octadecadienoate (all <i>cis</i> -9,12)	112-63-0	.29%

Methyl eicosanoate	1120-28-1	.04%
Methyl eicosenoate ( <i>cis</i> -11)	2390-09-2	.04%
Methyl octadecatrienoate (all <i>cis</i> -9,12,15)	301-00-8	.14%
Methyl docosanoate	929-77-1	.04%
Methyl docosenoate ( <i>cis</i> -13)	1120-34-9	.04%

**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 <sup>3</sup>	Germany
		TWA	2000 mg/m <sup>3</sup>	Hungary
		OEL	200 ppm	Japan
		TWA	400 ppm	Korea
		MAC-TGG	1200 mg/m <sup>3</sup>	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

<b>Appearance:</b>	Liquid
<b>Odor:</b>	Gasoline-like odor
<b>Odor threshold:</b>	No data available
<b>PH:</b>	No data available
<b>Melting/Freezing point:</b>	-91°C (-131°F)
<b>Initial boiling point and boiling range:</b>	98°C (209°F)
<b>Flash point:</b>	-4.0°C (25°F)-closed cup
<b>Evaporation rate (Butyl acetate = 1):</b>	No data available
<b>Upper/Lower flammability or explosive limit:</b>	LEL 1.05% UEL 6.7%
<b>Vapor pressure (72°C):</b>	40 mmHg
<b>Vapor density (Air=1):</b>	3.5
<b>Relative density:</b>	0.68
<b>Solubility (ies):</b>	No data available
<b>Partition coefficient (n-octanol/water):</b>	Log Pow: >300
<b>Auto-ignition temperature:</b>	222°C (433°F)
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	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, CO<sub>2</sub>), water

## Section 11. Toxicological Information

**Acute toxicity:**

Heptane

LC50: Inhalation - Rat - 10 gm/m<sup>3</sup> @ 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

<b>Toxicity:</b>	LC50	Tilapia mossambica	375 mg/l	96 h
<b>Fish</b>	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.

<b>Component</b>	<b>CAS Number</b>
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

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

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5
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.

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5
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 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

**SARA 313 Components:**

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5

**SARA 311/312 Hazards:**

Fire hazard, immediate (acute) health hazard, delayed (chronic) health hazard.

**Massachusetts Right To Know Components:**

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5

**New Jersey Right To Know Components:**

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5

**Pennsylvania Right To Know Components:**

<b>Component</b>	<b>CAS Number</b>
Heptane	142-82-5

**California Prop. 65 Components:**

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

<b>Component</b>	<b>CAS Number</b>
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.

<b>Revision Summary:</b>	10/12/2012	Version 1: New
	04/24/2014	Version 2: Revised product use statement.
	03/30/2015	Version 3: Changed company address.

### 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>.