



## 2. Hazards identification

### 2.1 Classification of the substance or mixture

*Classification under Regulation (EC) No 1272/2008 (CLP)*

No classification

*Most important adverse physicochemical, human health and environmental effects*

Substance is not classified as hazardous.  
See also section 2.3.

### 2.2 Label elements

*Label elements according to Regulation (EC) No. 1272/2008 (CLP)*

Not relevant, substance is not classified as hazardous.

### 2.3 Other hazards

*PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) criteria*

Substance does not meet the criteria to be considered PBT neither vPvB

*Other hazards*

May cause minor eye irritation.  
Vapors produced by heating, or finely misted materials may irritate the mucous membranes and cause dizziness, and nausea.  
Thermal burns are possible on contact with material at elevated temperatures.

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical identity of the main constituent of the substance

<i>Main constituent</i>	
EC name:	Fatty acids, C16-18 and C18-unsatd., Me esters
EC number:	267-015-4
CAS number (EC inventory):	67762-38-3
CAS name:	UVCB substance, for CAS name information it is possible to refer to the different composition substances.
IUPAC name:	UVCB substance, no IUPAC name available.

Description:	This substance is identified by SDA Substance Name: <b>C16-C18 and C18 unsaturated alkyl carboxylic acid methyl ester</b> and SDA Reporting Number: 11-010-00.
	The following other substances may fall within the same description: Fatty acids, rape oil, Me esters - EINECS 287-828-8 - CAS 85586-25-0 Soybean oil, Me esters - EINECS 267-055-2 - CAS 67784-80-9 Fatty acids, soya, Me esters - EINECS 272-898-4 - CAS 68919-53-9 Fatty acids, sunflower-oil, Me esters - EINECS 272-900-3 - CAS 68919-54-0 Fatty acids, palm-oil, Me esters - EINECS 293-086-6 - CAS 91051-34-2
	The substance is synthesized by transesterification of natural oils with methanol to produce methylesters and glycerin. In this description enter all substances generated by natural oils with fatty acid chains lengths focused on C16, C18 and C18 unsatd. above 2%. Examples of such raw materials are rapeseed oil, soya oil, soybean oil, sunflower oil, palm oil and all analogous derivatives.
Molecular formula:	UVCB substance, not univocal molecular formula available
Molecular weight range:	ca. 296.0

*Chemical identity of any relevant impurity, stabilizing additive, or individual constituent other than the main constituent*

None.

### 3.2 Mixtures

Not relevant as substance is not a mixture.

## 4. First aid measures

### 4.1 Description of first aid measures

#### *First aid instructions*

##### EYES

Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes

##### SKIN

Wash immediately with plenty of soap and water. Remove all contaminated clothes and footwear immediately unless stuck to skin.

##### INHALATION

Remove casualty from exposure ensuring one's own safety whilst doing so; seek medical attention if symptoms persist.

##### INGESTION

Do not induce vomiting. Wash out mouth with water. If conscious, give half a liter of water to drink immediately. If gastro-intestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person)

**4.2 Most important symptoms and effects, both acute and delayed***Most important symptoms and effects.*

Minor eye irritation possible.  
 Vapors produced by heating, or finely misted materials may irritate the mucous membranes and cause dizziness, and nausea.  
 Thermal burns are possible on contact with material at elevated temperatures.

**4.3 Indication of any immediate medical attention and special treatment needed***Indication of any immediate medical attention and special treatment needed*

Not relevant for this substance.

**5. Fire fighting measures****5.1 Extinguishing media***Extinguishing media*Appropriate extinguishing media.

Dry chemical powder, alcohol resistant foam, halon (may not be permissible in some countries), CO<sub>2</sub>, water spray (fog).

Unsuitable extinguishing media

Water stream may splash the burning liquid and spread fire

**5.2 Special hazards arising from the substance or mixture***Special hazards*

In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

Biodiesel soaked rags or spill absorbents (i.e. oil dry, polypropylene socks, sand, etc.) can cause spontaneous combustion if stored near combustibles and not handled properly.

**5.3 Advice for firefighters***Advice for firefighters*

Fire-fighters should use self-contained breathing apparatus to avoid exposure to smoke and vapour. Wear protective clothing to prevent contact with skin and eyes.

Protective equipment

Fire-resistant clothing, self-contained breathing apparatus

Additional information

Flammable Class IV. according to ČSN 65 0201

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

*Personal precautions, protective equipment and emergency procedures.*

Prevent contamination of clothes and shoes; avoid contact with the skin and eyes.

Eliminate all sources of ignition. If outside do not approach from downwind. Evacuate all personnel who do not take part in the cleaning/emergency procedure. Mark out the contaminated area with signs and prevent access to unauthorised personnel.

#### 6.1.2 For emergency responders

*Advice for firefighters*

Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes. Flammable Class IV. according to ČSN 650201

### 6.2 Environmental precautions

*Environmental precautions*

Prevent any leakage. Do not discharge into communal sewerage, drains or waters.

### 6.3 Methods and material for containment and cleaning up

#### 6.3.1 Spill containment

Contain any spillage using bounding.

#### 6.3.2 Spill clean-up

Pick up small spills with absorbent materials and dispose of properly to avoid spontaneous combustion. Disposal must be carried out according to valid legislation on wastes and residues. Recover large spills for appropriate treatment and reutilization or for disposal according to legislation. Wash hard surfaces with safety solvent or detergent to remove remaining oil film. Greasy nature will result in a slippery surface.

#### 6.3.3 Other information

Not relevant for this substance

### 6.4 Reference to other sections

*Reference to other sections*

See also sections 8 and 13

## 7. Handling and storage

### 7.1 Precautions for safe handling

#### 7.1.1 Recommendations for safe handling.

For safe handling is recommended to avoid direct contact with the substance.

Note: Substance **Fatty acids, C16-18 and C18-unsaturated, Methyl esters** is not classified as hazardous according to the criteria of CLP Regulation (EC) No. 1272/2008. Specific Risk Management Measures are therefore not required. Nevertheless, the exposure of workers during and after normal operations should be minimized by the use of good industrial hygiene practice for handling chemical substances and mixtures.

#### 7.1.2 Occupational hygiene advice.

Do not eat, drink or smoke in work areas; wash hands after use; and remove contaminated clothing and protective equipment before entering eating areas.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Safe storage conditions

Store in cool, well ventilated area. Keep away from sources of ignition, excessive heat and oxidizing agents. Keep container tightly closed. Storage life, ~2 years. Protect from frost. Protect against static electricity. Store at +15°C to +25°C.

### 7.3 Specific end use(s)

#### Specific end use

The product is designed especially for use as fuel for diesel engines.

#### Reference to other sections

See section 1.2

## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Control parameters

Exposure limits are not established.

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

No relevant engineering controls.

**8.2.2 Individual protection measures****RESPIRATORY PROTECTION:**

If vapours or mists are generated, wear a NIOSH approved organic vapour/mist respirator.

**PROTECTIVE CLOTHING:**

Safety glasses, goggles, or face shield recommended to protect eyes from mists or splashing. PVC coated gloves recommended to prevent skin contact.

**OTHER PROTECTIVE MEASURES:**

Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

**8.2.3 Environmental exposure controls**

Prevent product from entering sewerages. Is not allowed to pour any amount of the product to the sewerage or water pipes. See also 6.2

**9. Physical and chemical properties****9.1 Information on basic physical and chemical properties***Overview of physicochemical properties*

Appearance	Green/yellow liquid oil
Odour	Mild
Odour threshold	N/A
pH	N/A
Melting point/freezing point	6.29°C at 1 atm The range of melting temperature goes from -16.92°C to +15.59°C.
Initial boiling point and boiling range	354.3°C at 1 atm
Flash point	173°C +/- 1°C
Evaporation rate	N/A
Flammability (solid, gas)	According to Regulation (EC) No 1272/2008 (CLP): Not flammable According to ČSN 650201: Flammable Class IV.
Upper/lower flammability or explosive limits	N/A
Vapour pressure	4.2 m Bar at 25°C 420 Pa, at 25°C

<i>Overview of physicochemical properties</i>	
	3.6 m Bar at 20°C
Vapour density	N/A
Relative density	0.8881 g/cm <sup>3</sup> at 20°C
Solubility(ies)	< 0,023 mg/l Instrumental detection limit
Partition coefficient: n-octanol/water	Log Kow = 6.2 at 25°C
Auto-ignition temperature	261°C +/- 5°C The ignition delay observed at this temperature was 60 seconds and a Temperature increase at middle of the flask was 14°C.
Decomposition temperature	N/A
Viscosity	6.1 mPa*s at 20°C
Explosive properties	Not explosive. In accordance with column 2 of REACH Annex VII, the study does not need to be conducted since there are no chemical groups associated with explosive proprieties present in the molecule.
Oxidising properties	Not oxidizing. In accordance with column 2 of REACH Annex VII, the study does not need to be conducted since the substance is incapable of reacting exothermically with combustible materials based on the chemical structure

## **9.2 Other information**

<i>Other information</i>
Chemical characteristics: It is a complex mixture of fatty acid methyl C16-18 and C18 unsaturated fatty acids. To improve certain properties may contain appropriate additives as depressants when used at low temperatures, corrosion inhibitors, etc. in different concentrations of the order to 0.1%.

## **10. Stability and reactivity**

### **10.1 Reactivity**

<i>Reactivity hazards</i>
This product is stable and hazardous reaction will not occur under appropriate handling and storage.



**10.2 Chemical stability***Chemical stability*

The substance is stable under normal ambient and hazardous reaction will not occur under appropriate handling and storage. Store in cool, well ventilated area. Storage life, ~2 years. Protect from frost. Store at +15°C to +25°C. Keep away from oxidizing agents, excessive heat, and ignition sources.

**10.3 Possibility of hazardous reactions***Possibility of hazardous reactions*

The substance reacts with strong bases to produce methanol.

**10.4 Conditions to avoid***Conditions to avoid*

See 10.5.

**10.5 Incompatible materials***Incompatible materials*

Strong oxidizing agents. Strong bases.

**10.6 Hazardous decomposition products***Hazardous decomposition products*

Combustion produces carbon monoxide, carbon dioxide along with thick smoke.

**11. Toxicological information****11.1 Information on toxicological effects***Information on the following hazard classes: Fatty acids, C<sub>16</sub>-C<sub>18</sub> and C<sub>18</sub> unsaturated methyl ether*

<i>Hazard class</i>		<i>Result</i>	<i>Test method</i>
Acute toxicity	Oral:	LD50 > 5000 mg/kg/bw (male/female)	Study is closely comparable to OECD guideline 401 and is GLP).
	Dermal :	LD50 has been tested in a fixed dose test at 2000 mg/kg/bw on rabbit with fatty acids C6 -C12 methyl esters with no sign of toxicity	
There are 2 mains studies related to acute toxicity.			

<i>Information on the following hazard classes: Fatty acids, C<sub>16</sub>-C<sub>18</sub> and C<sub>18</sub> unsaturated methyl ether</i>			
<i>Hazard class</i>	<i>Result</i>	<i>Test method</i>	
Skin corrosion/irritation;	<p>In general, esters of long-chain fatty acids are always negative with relation to irritation (from C18 onward), while esters of short-chain fatty acids are always (slightly) positive (up to C10).</p> <p>There are 2 relevant tests, for C16-C18 and C18 unsaturated me esters and fatty acids, rape oil, me esters, showing no irritation that support this conclusion. Eye irritation tests are negative too and it is unlikely that a substance would be less irritating to eyes than the skin.</p>	OECD Guideline 404	
Serious eye damage/irritation;	<p>Conjunctivae effects were observed 1 hour after exposure. Slight chemosis and slight conjunctivae were observed in two animals and four animals, respectively. Two animals presented conjunctivae with diffuse, crimson colour and individual vessels not easily discernible. These effects were fully reversible within 1 day.</p>	OECD guideline 405	
Sensitisation;	Respiratory sensitisation	No information but no respiratory sensitisation is expected.	
	Skin sensitisation;	<p>In a dermal sensitization study, Sterol C in corn oil was tested using the Guinea pig maximization test.</p> <p>No clinical signs and no deaths were noted during the study. No cutaneous reactions were observed after the challenge application. Under the experimental conditions of the study, it is concluded that Sterol C does not induce delayed contact hypersensitivity in guinea pig.</p>	The study was performed according to OECD guideline 406 and GLP
Germ cell mutagenicity;	Reverse gene mutation assay	<p>Strains of Salmonellatyphimurium were exposed to Sterol C in the presence and absence of mammalian metabolic activation. The positive controls induced the appropriate responses in the corresponding strains. No noteworthy increase in the number of revertants was induced in all tested strains with and without metabolic activation.</p>	This study satisfies the requirement for Test Guideline OECD 471 for in vitro mutagenicity (bacterial reverse gene mutation) data.
	In vitro cytogenicity test	<p>Primary lymphocyte cultures were exposed to Sterol C with and without metabolic activation. Positive controls induced the appropriate response. There was no evidence of chromosome aberration was induced over background.</p>	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

<i>Information on the following hazard classes: Fatty acids, C<sub>16</sub>-C<sub>18</sub> and C<sub>18</sub> unsaturated methyl ether</i>			
<i>Hazard class</i>		<i>Result</i>	<i>Test method</i>
	In vitro mammalian cell mutation test.	Methyl myristate alone had no mitogenic activity. In combination with phytohemagglutinin, however, a comitogenic activity was found.	EU Method B.17 (Mutagenicity - In Vitro Mammalian Cell Gene Mutation Test).
Carcinogenicity;		Two fatty acid methyl esters, methyl oleate and methyl 12-oxo-trans-10-octadecenoate, have been tested for carcinogenicity by oral and subcutaneous administration in ST/a mice of both sexes. A positive effect of methyl oleate could not be assessed, while the results pointed to a promoter effect of methyl oxo-octadecenoate. Given in the diet, this compound increased the incidence and number of forestomach papillomas within 83 weeks after initiation by 4-nitroquinoline 1-oxide.	EU Method B.32 (Carcinogenicity Test)
Reproductive toxicity;	Developmental effects	The tested substance revealed no effect in Screening for reproduction for a dose of until 1000 mg/kg/bw	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
	Fertility effects		
STOT-single exposure;		No information	No information
STOT-repeated exposure;		The tested substance revealed no effect in Repeated dose oral toxicity for a dose of until 1000 mg/kg/bw	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Aspiration hazard.		No information	No information

*CMR (Carcinogenic, Mutagenic and Repto-toxic) properties assessment*

An assessment of the above information leads to a conclusion that no CMR properties are expected.

*Effects of the substance/mixture via each possible route of exposure*

See section 2.

*Potential adverse health effects and symptoms*

See section 2.

*Information on whether delayed or immediate effects*

See section 2.

*Interactions*

None expected.

*Other information*

See section 2 for effects of the substance

**12. Ecological information****12.1 Toxicity**

Fatty acids, C16-C18 and C18 unsaturated methyl ether	
OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)	EC50 (48 hour): 2504 mg/l
OECD Guideline 201 (Alga, Growth Inhibition Test)	ErC50 (72 hour): > 0.131 mg/L or 72h-ErLR50>100mg/L (expressed as loading rate).
OECD Guideline 203 (Fish, Acute Toxicity Test)	Visible abnormalities (loss of equilibrium, changes in swimming behaviour, respiratory function, pigmentation, etc.) were not observed in Fish exposed to an average measured loading rate of 0.26 mg/L (limit test),
Other aquatic/terrestrial toxicological end points	No information.

**12.2 Persistence and degradability**

N/A

**12.3 Bioaccumulative potential**

Fatty acids, C16-C18 and C18 unsaturated methyl ether	
ISO 10712	All methyl esters of fatty acids are readily biodegradable in water, soil and sediments. They pass the 10 days windows with 62% of degradation. Half-life in the three compartment is less than 2 -3 days. In some case even less than 1 day.

**12.4 Mobility in soil**

N/A

**12.5 Results of PBT and vPvB assessment**

Substance is not considered PBT either vPvB.

**12.6 Other adverse effects**

N/A

**13. Disposal considerations****13.1 Waste treatment methods***Waste treatment methods*

Disposal of waste and unused residues must be in accordance with the applicable legislation (Act no. 185/2001 Coll. on Wastes). Unusable product residues usually are disposed of by combustion in incinerators. Due to biodegradability, contaminated absorbent material may be stored on approved landfills. Wastes can be disposed of only by authorized personnel.

**14. Transport information**

## Transport information for Fatty acids, C16-18 and C18-unsaturated, Methyl esters

## Land transport (ADR/RID/)

UN number	Not classified
Class	Not classified
Classification code	Not classified
Packaging group	Not classified
Labels	Not classified

## Inland waterway transport (AND(R))

UN number	Not classified
Class	Not classified
Classification code	Not classified
Packaging group	Not classified
Labels	Not classified

## Marine transport (IMDG)

UN number	Not classified
Proper shipping name and description	Not classified
Chemical name	Not classified
Class	Not classified
Packaging group	Not classified
EmS number	Not classified
Labels	Not classified

Marine pollutant	no
Air transport ICAO/IATA	
UN number	Not classified
Proper shipping name and description	Not classified
Chemical name	Not classified
Class	Not classified
Packaging group	Not classified
Labels	Not classified

## 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

*Specific safety, health and environmental regulations/legislation for the substance.*

**IATA** - International Air Transport Association

**RID** - Regulations for international rail transport of dangerous goods.

**ADR** - European Agreement concerning international carriage of dangerous goods by road.

**ČSN 650201** - Flammable liquids. Plants and warehouses.

**Gov. Regulation no. 361/2007 Coll.**, laying down conditions for the protection of health of workers at work as amended.

**Act no. 201/2012 Coll.** on Air Protection, as amended.

**Act no. 350/2011 Coll.** on chemical substances and mixtures, and amending certain laws (Chemical Law)

**Decree no. 93/2016 Coll.** on waste catalogue

**Act no. 111/1994 Coll.** on road transport, as amended

**Act no. 185/2001 Coll.** on wastes, as amended

**Act no. 254/2001 Coll.** on waters, as amended

**EC Regulation no. 1907/2006** Registration, evaluation, authorization and restriction of chemicals, establishing a European Chemicals Agency (REACH)

**EC Regulation no. 453/2010.** Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH - MSDS)

**EC Regulation no. 1272/2008** on classification, labelling and packaging of substances and mixtures (CLP)

**15.2 Chemical safety assessment***Chemical Safety Assessment (CSA)*

Chemical Safety Assessment is available for the substance ES No. 267-015-4 (the substance is not classified as hazardous and is not a PBT/vPvB).

**16. Other information**

**ATTENTION: This safety data sheet reflects our present knowledge and describes the product as to its safety requirements. It does not assure any characteristics but gives recommendations for safe storage and handling measures. Receivers have to observe any legal regulation in their own responsibility.**

*SDS revision information*

First edition of the document: revision 0 from 1. 1. 2011 - document edition in MSDS version

Second edition of the document: revision 1 from 31. 1. 2013 - document edition in MSDS version

Third edition of the document: revision 2 from 31. 5. 2015 - document edition in MSDS version

Fourth edition of the document: revision 3 from 26. 8. 2016 - document edition in MSDS version

*Key/Abbreviations*

CSA: Chemical Safety Assessment

PBT: Substance with Persistent, Bioaccumulative and Toxic properties.

vPvB: Substance with very Persistent and very Bioaccumulative properties.

*Key References*

ECHA - European Chemical Agency - Information on chemicals

<http://echa.europa.eu/information-on-chemicals>

*Classification information for mixtures*

Not relevant

*List of relevant hazard statements and/or precautionary statements.*

Not relevant. Described in Sections 2 to 15.

*Advice on appropriate training for employees*

Regular training in the scope safety handling, health and environment.