


1. PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Product Name:** Fir essential oil, brand "SIBERIAN FIR"
1.2 Intended Use: Designed for cold inhalation, air aromatization, massage, aromatic baths, compresses, etc.
1.3 Manufacturer and supplier: Limited Liability Company «ELKON»
1.4 Address: 650002, Kemerovo region - Kuzbass, Kemerovo urban district, Kemerovo city, 1st Tulsy lane, 5, office 3
1.5 Emergency telephone: +7 (952) 173-51-44
1.6 E-mail: info@elkon.pro

2. HAZARD IDENTIFICATION ACCORDING TO GHS

- 2.1 Classification (Warning markings)** According to the Harmonized Classification and Labeling (CLP) approved by the European Union:
GHS Classification:
- Flammable liquid and vapor, class 3;
- Harmful if swallowed, class 4;
- Causes skin irritation, class 2;
- Causes serious eye damage, class 1;
- May cause an allergic skin reaction, class 1B;
- May be fatal if swallowed and enters airways, class 1;
- Very toxic to aquatic life, class 1;
- Very toxic to aquatic life with long lasting effects, class 1.
- 2.2 Signal word** Danger
- 2.3 Hazard pictograms** 
- 2.4 H-Statements** H226, H302, H315, H318, H317, H304, H400, H410
For more information on H-Statements, see Section 16.
- 2.5 P-Statements** P210, P241, P262, P273, P281, P301 + P330 + P331, P302 + P352, P304 + P340, P305 + P351 + P338, P314
For more information on P-Statements, see Section 16.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance	Concentration (%)	CAS-No	EC-No	Classification GHS / CLP
1,7,7-Trimethyl-2-bicyclo[2.2.1]heptyl acetate	To 32	76-49-3	200-964-4	Not Classified
2,2-Dimethyl-3-methylenebicyclo[2.2.1]heptane	To 26	79-92-5	201-234-8	Flam. Sol. 2: H228 Eye Irrit. 2: H319 Aquatic Chronic 1: H410
2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	To 22	80-56-8	201-291-9	Iam. Liq. 3: H226 Acute Tox. 4: H302 Skin Irrit. 2: H315 Skin Sens. 1B: H317 Asp. Tox. 1: H304 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
3,7,7-Trimethylbicyclo[4.1.0]hept-3-ene	To 15	13466-78-9	236-719-3	Flam. Liq. 3: H226 Skin Irrit. 2: H315 Skin Sens. 1: H317 Asp. Tox. 1: H304 Aquatic Chronic 3: H412

(R)-1-Methyl-4-(1-methylethenyl)cyclohex-1-ene	To 7,5	5989-27-5	227-813-5	Flam. Liq. 3: H226 Skin Irrit. 2: H315 Skin Sens. 1B: H317 Asp. Tox. 1: H304 Aquatic Acute 1: H400 Aquatic Chronic 3: H412
6,6-dimethyl-2-methylene, (1S,5S)-bicyclo[3.1.1]heptane	To 5,8	18172-67-3	242-060-2	Flam. Liq. 3: H226 Skin Irrit. 2: H315 Skin Sens. 1B: H317 Asp. Tox. 1: H304 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one	To 5	76-22-2	200-945-0	Flam. Sol. 2: H228 Acute Tox. 4: H332 Skin Irrit. 2: H315 Eye Dam. 1: H318 STOT SE 2: H371
[1R-(1R,4E,9S)]4,11,11-Trimethyl-8-methylenebicyclo[7.2.0]undec-4-ene	To 3,6	87-44-5	201-746-1	Skin Sens. 1B: H317 Asp. Tox. 1: H304
3-methylidene-6-propan-2-ylcyclohexene	To 3,5	555-10-2	209-081-9	Flam. Liq. 3: H226 Asp. Tox. 1: H304
1,7,7-Trimethylbicyclo[1.2.2]heptanol-2	To 3	507-70-0	208-080-0	Flam. Sol. 2: H228 Acute Tox. 4: H332 Skin Irrit. 2: H315 Eye Dam. 1: H318 STOT SE 2: H371
2,3-dimethylbicyclo[2.2.1]hept-2-ene)	To 2,7	529-16-8	No	Not Classified
1,7,7-trimethyltricyclo[2.2.1.0 2,6]heptane	To 2,3	508-32-7	208-083-7	Not Classified
2,6,6,9-tetramethylcycloundeca-1,4,8-triene	To 1,8	6753-98-6	229-816-7	Not Classified
3-Methyl-6-(1-methylethylidene)cyclohexene	To 1,2	586-62-9	209-578-0	Skin Sens. 1B: H317 Asp. Tox. 1: H304 Aquatic Acute 1: H400 Aquatic Chronic 1: H410

4. FIRST AID MEASURES



4.1 Eye Contact

4.2 Skin Contact

4.3 After swallowing

4.4 After inhalation

4.5 Most important symptoms and effects, both acute and delayed

4.6 Potential Acute Health Effects

Rinse with plenty of water for 15 minutes. Seek immediate medical attention.

Wash the contaminated area with soap and water. Seek medical attention if necessary.

Drink plenty of water, take activated charcoal, use a saline laxative, or drink milk. Seek medical attention.

Fresh air, rest, strong tea or coffee. If necessary, seek medical attention.

Sore throat, cough, dizziness, headache, drowsiness, disturbances in breathing rhythm and coordination of movements, nausea, vomiting, diarrhea.

No information.

5. FIREFIGHTING MEASURES



- 5.1 Flammability** Flammable liquid.
5.2 Thermodestruction products Carbon oxides.
5.3 Fire and explosion safety Fire hazardous product. Explosive product.
5.4 Ways of fire extinguishing Sprayed water with a wetting agent, foam and powder fire extinguishers, sand, felt. Do not use compact water jets.
5.5 Specific Extinguishing Vapors form explosive mixtures with air, which can spread far from the leak site. Containers can explode when heated. In empty containers, residues can form explosive mixtures. Spilled components create slippery surfaces.

6. MEASURES IN CASE OF ACCIDENTAL RELEASE/LEAKAGE

- 6.1 Engineering safety systems** The premises must be equipped with general supply and exhaust ventilation and local ventilation. Process equipment must be as airtight as possible. Loading and unloading operations, as well as methods for transporting raw materials, finished products, and waste, must be mechanized and automated whenever possible. Electrical equipment, power lines, and artificial lighting fixtures must be explosion-proof. When handling the product, do not use tools that produce sparks when struck.
6.2 Environmental precautions Maximum sealing of tanks, communications, and other equipment; periodic monitoring of harmful substance content in the air of the work area; analysis of industrial wastewater for harmful substance content in permissible concentrations; purification of air in industrial premises to established standards before discharge into the atmosphere.
6.3 Contamination and cleaning In case of soil contamination, remove the contaminated soil layer for cleaning and disposal in accordance with current regulations.

7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling.** Advice on safe handling:
Observe label precautions.
Advice on protection against fire and explosion:
Keep away from open flame, heat, static electricity, moisture.
Hygiene measures:
Keep away from food, drinks and animal feed, out of the reach of children.
7.2 Safe storage conditions. Storage conditions:
Store in cool, well-ventilated warehouses at temperatures between 5°C and 35°C.
Shelf life: 12 months from date of manufacture.
7.3 Special applications. No information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters. Limit values of impact.** MPC w.a. (2,6,6-trimethylbicyclo[3.1.1]hept-2-ene) = 10 mg/m³, vapor, 5-ethylidenebicyclo[2.2.1]hept-2-ene;
MPC w.a. (3,7,7-trimethylbicyclo[4.1.0]hept-3-ene) = 10 mg/m³, vapor, 5-ethylidenebicyclo[2.2.1]hept-2-ene;
MPC w.a. (1,7,7-trimethylbicyclo[2.2.1]heptan-2-one) = 3 mg/m³, vapor.

8.2 Personal Protective Equipment Eye Protection



Protection of respiratory organs



Skin protection



8.3 Special protective equipment

Not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Characteristic	Indicators
Appearance	Liquid
Color	From colorless to pale yellow
Odor	Fresh, woody, resinous
Pour point, °C, not higher	No information
Boiling point, °C	No information
Flammability, °C	No information
Explosive limits, %: - bottom - top	No information
Flash point, °C, not below	43
Self-ignition temperature, °C, not lower	No information
Decomposition temperature, °C	No information
pH	No information
Dynamic viscosity, mPa*sec, at 20 °C	No information
Solubility	No information
Partition coefficient n-octanol/water	No information
Vapor pressure, 50 °C	No information
Density, at 20 °C, g/cm ³	0,895-0,912
Relative vapor density	No information
Particle Characteristics	No information
Refractive index at 20 °C	1,468-1,473
Acid number, not more than	1,0

10. STABILITY AND REACTIVITY**10.1 Chemical stability**

The product is chemically stable under normal storage and operation conditions.

10.2 Reactivity

Fir oil is insoluble in water but soluble in alcohols and carrier oils. Fir oil is also highly volatile and stable when properly stored, but unstable in highly acidic and alkaline environments.

10.3 Possibility of hazardous reactions

Fire hazard.

10.4 Incompatible materials

Oxidizing agents, strong acids, alkalis.

11. TOXICOLOGICAL INFORMATION**11.1 Acute toxicity**

For the product as a whole:

LD50 (ingestion) > 1989 mg/kg body weight (rat)

LC50 (inhalation, 4 h) > 20000 mg/m³ air (rat)

LD50 (dermal) > 5000 mg/kg body weight (rabbit)

1,7,7-Trimethyl-2-bicyclo[2.2.1]heptyl acetate:

No data available

2,2-Dimethyl-3-methylenebicyclo[2.2.1]heptane:

LD50 (ingestion) > 2000 mg/kg body weight (rat)

LC50 (inhalation, 4 h) > 25000 mg/m³ air (rat)

LD50 (dermal) > 2000 mg/kg body weight (rabbit)

2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene:

LD50 (ingestion) 300-2000 mg/kg body weight (rat)

LD50 (dermal) > 2000 mg/kg body weight (rat)

3,7,7-Trimethylbicyclo[4.1.0]hept-3-ene:

LD50 (ingestion) 4800 mg/kg body weight (rat)

(R)-1-Methyl-4-(1-methylethenyl)cyclohex-1-ene:

LD50 (ingestion) > 2000 mg/kg body weight (rat)

LD50 (dermal) > 5000 mg/kg body weight (rabbit)

6,6-dimethyl-2-methylene, (1S,5S)-bicyclo[3.1.1]heptane:

LD50 (ingestion) > 5000 mg/kg body weight (rat)

LD50 (dermal) > 5000 mg/kg body weight (rabbit)

1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one:

LD50 (ingestion) > 5000 mg/kg body weight (rat)

LC50 (inhalation, 2 h) > 10000 mg/m³ air (rat)

LD50 (dermal) > 2000 mg/kg body weight (rat)

1,7,7-Trimethylbicyclo[2.2.1]heptan-2-one:

11.2 Sensitization of the respiratory system, eyes and skin

11.3 Mutagenicity

11.4 Carcinogenicity

11.5 Reproductive toxicity

11.6 Specific target organ toxicity - single exposure

11.7 Specific target organ toxicity - repeated exposure

11.8 Aspiration hazard

Short-term toxicity

LC50 (4 days) 33.25 mg/L, fish

EC50 (48 h) 4.23 mg/L, aquatic invertebrates

EC50 (72 h) 0.3–1.71 mg/L, algae and cyanobacteria

[1R-(1R,4E,9S)]4,11,11-Trimethyl-8-methylenebicyclo-[7.2.0]undec-4-ene:

No information available

3-methyliden-6-propan-2-ylcyclohexene:

No information available

1,7,7-Trimethylbicyclo[1.2.2]heptanol-2:

LD50 (ingestion) > 5000 mg/kg body weight (rat)

LD50 (dermal) > 2000 mg/kg body weight (rat)

2,3-dimethylbicyclo[2.2.1]hept-2-ene:

No data available

1,7,7-trimethyltricyclo[2.2.1.02.6]heptane:

No data available

2,6,6,9-tetramethylcycloundeca-1,4,8-triene:

No information available

3-Methyl-6-(1-methylethylidene)cyclohexene:

LD50 (ingestion) 4390 mg/kg body weight (rat)

LD50 (dermal) > 4300 mg/kg body weight (rabbit)

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction.

Not classified as a mutagen.

Not classified as a carcinogen.

Not classified as a reproductive toxin.

Specific target organ toxicity - single exposure: the substance or mixture is not classified as a specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure: the substance or mixture is not classified as a specific target organ toxicant, repeated exposure.

May be fatal if swallowed or inhaled.

12. ECOLOGICAL INFORMATION

12.1 Aquatic microorganisms

1,7,7-Trimethyl-2-bicyclo[2.2.1]heptyl acetate:

No data available

2,2-Dimethyl-3-methylenebicyclo[2.2.1]heptane:

Short-term toxicity

LC50 (4 days) 0.72 mg/L, fish

EC50 (48 h) 0.72 mg/L, aquatic invertebrates

EC50 (72 h) 1.75 - 1000 mg/L, algae and cyanobacteria

2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene:

Short-term toxicity

LC50 (4 days) 0.303 mg/L, fish

EC50 (48 h) 0.475 mg/L, aquatic invertebrates

NOEC (48 h) 0.131 mg/L, algae and cyanobacteria

3,7,7-Trimethylbicyclo[4.1.0]hept-3-ene:

No data available

(R)-1-Methyl-4-(1-methylethynyl)cyclohex-1-ene:

Short-term toxicity

LC50 (4 days) 0.46–0.72 mg/L, fish

EC50 (48 h) 0.307–0.51 mg/L, aquatic invertebrates

EC50 (72 h) 0.214–0.32 mg/L, algae and cyanobacteria

Chronic toxicity

NOEC (28 days) 0.08 mg/L, fish

NOEC (21 days) 0.05–0.08 mg/L, aquatic invertebrates

6,6-dimethyl-2-methylene, (1S,5S)-bicyclo[3.1.1]heptane:

Short-term toxicity

LC50 (4 days) 0.502–0.68 mg/L, fish

EC50 (48 h) 1.09–1.25 mg/L, aquatic invertebrates

EC50 (72 h) 0.7 mg/L, algae and cyanobacteria

[1R-(1R,4E,9S)]4,11,11-Trimethyl-8-methylenebicyclo-[7.2.0]undec-4-ene:

Short-term toxicity

EC50 (48 h) 0.17 mg/L, aquatic invertebrates

EC50 (72 h) 0.033 mg/L, algae and cyanobacteria

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3-methylidene-6-propan-2-ylcyclohexene:

No information available

1,7,7-Trimethylbicyclo[1.2.2]heptanol-2:

Short-term toxicity

LC50 (4 days) 33.25 mg/L, fish

EC50 (48 h) 4.23 mg/L, aquatic invertebrates

EC50 (72 h) 0.3–1.71 mg/L, algae and cyanobacteria

2,3-dimethylbicyclo[2.2.1]hept-2-ene):

No data available

1,7,7-trimethyltricyclo[2.2.1.02.6]heptane:

No data available

2,6,6,9-tetramethylcycloundeca-1,4,8-triene:

No information available

3-Methyl-6-(1-methylethylidene)cyclohexene:

Short-term toxicity

LC50 (4 days) 0.702–18 mg/L, fish

EC50 (48 h) 0.421–14.85 mg/L, aquatic invertebrates

EC20 (72 h) 5.36 mg/L, algae and cyanobacteria

Decomposes in the environment.

No information

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Mobility in soil

12.4 PBT and vPvB assessment results

PBT/vPvB (Persistence Bioaccumulative Toxicity/Very Persistence Strong Bioaccumulative) has not been evaluated.

12.5 Other adverse effects

No information.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste must be disposed of in accordance with the EU Waste Directive 2008/98/EC and other national and local regulations. Dispose of contents/container in accordance with local/regional/national/international regulations. Use special instructions/safety data sheets.

14. TRANSPORT INFORMATION

14.1 UN number

1993

14.2 Proper shipping name

Proper shipping name:

FLAMMABLE LIQUID, N.O.S.

Transport name:

Fir essential oil, brand «SIBERIAN FIR»

14.3 Class

3

14.4 Packing group

III

14.5 Environmentally hazardous

Yes

14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

None

14.7 Special precautions

Transportation of dangerous goods by road, rail and inland waterway transport (ADR/IMDG/ADN):

Entry in the transport document: UN1993, FLAMMABLE LIQUID, N.O.S., 3, III, (D/E)



Danger label:

Classification Code - F1

Limited Quantities (LQ): 5 L

Excepted Quantities (EQ): E1

Special Provisions (SP): 274, 601

Tunnel Restriction Code (TRC): D/E

Hazard Identification Number: 30

Transport Category: 3

International Maritime Dangerous Goods Code (IMDG):

Shipper's declaration information: UN1993, FLAMMABLE LIQUID, N.O.S., 3, III

Marine pollutant: yes



Danger label:

Limited Quantity (LQ): 5 L

Excepted Quantity (EQ): E1

Special Provisions (SP): 274, 601

EmS: F-E, S-E

Stowage Category: B

International Air Transport Association (ICAO-IATA/DGR):

Shipper's declaration details: UN1993, Flammable liquid, n.o.s., 3, III



Danger label:

Limited Quantity (LQ): 5 L

Excepted Quantity (EQ): E1

Special Provisions (SP): A3.

15. REGULATORY INFORMATION

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

European Union:

Regulation (EU) No 878/2020/EC, REACH amending Annex II to Regulation (EU) Regulation No. 1907/2006 (EC) of the Parliament and the Council of the EU (18 December 2006) concerning the registration, assessment, licensing and restriction of chemicals (REACH);

Regulation No. 1272/2008 (EC) of the Parliament and the Council of the EU (16 December 2008) on the classification, labeling and packaging of substances and mixtures;

ADR - Agreement of European States on the International Carriage of Dangerous Goods by Road, concluded in Geneva on September 30, 1957, with subsequent amendments;

RID - Regulations on the International Carriage of Dangerous Goods by Rail, which is Appendix C to the Convention on International Carriage by Rail (COTIF), concluded in Vilnius on June 3, 1999, with subsequent amendments;

ADN - Agreement of European States on the International Carriage of Dangerous Goods by Inland Waterways, concluded in Geneva on May 26, 2000, with subsequent amendments;

IMDG Code - International Maritime Dangerous Goods Code;

ICAO / IATA IATA - Agreement on International Carriage by Air. ICAO - International Civil Aviation Organization.

15.2 Chemical safety assessment

For this product, a Chemical Safety Assessment according to REACH Regulation No. 1907/2006 has not been carried out.

16. OTHER INFORMATION

16.1 Full text of Risk Factor Statements

Hazard statements:

H226: Flammable liquid and vapour.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H317: May cause an allergic skin reaction.

H304: May be fatal if swallowed and enters airways.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P262: Avoid contact with eyes, skin, or clothing.

P273: Avoid release to the environment.

P281: Use appropriate personal protective equipment.

P301 + P330 + P331: If swallowed: Rinse mouth. Do not induce vomiting.

P302 + P352: If on skin: Wash with plenty of water.

P304 + P340: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314: If you feel unwell, seek medical advice/attention.

16.2 Training advice

Provide adequate information, instruction and training for users.

The information provided in this Material Safety Data Sheet is based on data that is believed to be accurate at the date of preparation of this Material Safety Data Sheet. No responsibility is accepted for any damage or injury caused by abnormal use or due to non-compliance with recommended practices. This information and product, provided that the person receiving them must independently determine the suitability of the product for his specific purposes and provided that he assumes the risk of using this product. In addition, no permission is granted or implied for the application of any patented invention without a license. The above information is believed to be accurate and reflect the information available to the manufacturer. However, this does not entail a guarantee for all the specific characteristics of the goods and does not serve as a basis for the emergence of contractual relations from a legal point of view. Current laws and regulations must be respected by the manufacturer's successor at their own risk.

CEO of ELKON LLC

/Khomichev V.A./

P. P.

