

SAFETY DATA SHEET

Lefab Produktion AB

Date of issue: March 31, 2014

Version No: 3.0

Replaces: May 20, 2013

Best Fuel 4 Stroke

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

1.1 Product identifier

PRODUCT NAME:	Best Fuel 4 Stroke
Synonym	Alkylate gasoline

1.2 Relevant identified uses of the substance or preparation and uses advised against

Use of the product	Fuel
Limited conditions of use	--

1.3 Details of the supplier of the safety data sheet

Company	Lefab Produktion AB
Address	Fabriksvägen 3
Zip code/Place	SE- 446 37 Älvängen
Country	Sweden
Telephone	+46 8 860 350
Home page	www.lefabproduction.se
E-mail	info@lefabproduction.se
Telephone	+46 707 606 978
Fax	--
Contact person	Lennart Theander

1.4 Emergency telephone number

Emergency telephone number	Call 112 or call directly +46 8 331 231 – Poisson Information Centre, Sweden
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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or preparation

Product definition: Preparation

Classification according to EC-Directive (1999/45/EG)

Xn, F+, N; R12, R38, R52/53, R65, R67

Classification according to (EG) 1278/2008

Flam. Liq. 2; H224

Skin Irrit. 2; H315

Asp. tox 1; H304

STOT SE3; H336

Aquatic Chronic 2; H412

2.2 Label Information

Label elements according to EC-Directive (1999/45/EG)

Labeling required.



Harmful



Extremely
flammable

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Contains:	Naphtha (petroleum), full-range alkylate, butane-contg. 80-97 %, Naphtha (petroleum), isomerization 5-15 %
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R-phrases

R12	Extremely flammable.
R38	Irritating to skin.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases

S2	Keep out of the reach of children.
S16	Keep away from sources of ignition - No smoking.
S23	Do not breathe vapor.
S24	Avoid contact with skin.
S33	Take precautionary measures against static discharges.
S43	In case of fire use: foam /water spray/dry chemical powder /carbon dioxide. Do not use water jet on burning product.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S29	Do not empty into drains.
S61	Avoid release to the environment. Refer to special instructions/Safety data sheets.

2.3 Other hazards

Substance meets the criteria for PBT under Regulation EC No. 1907/2006, appendix XIII	PBT: No P: No. B: No. T: No (refers to substances containing)
Substance meets the criteria for PBT under Regulation EC No. 1907/2006, appendix XIII	vPvB: No vP: No. vB: No (refers to substances containing)
Other hazards which do not cause classification	Not applicable.

2.3 Other hazards

Fire and explosion hazards: Store the product as a flammable liquid.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Preparation

No	Product/ ingredient name	CAS- number	EC- number	REACH registration number	Conc. (weight-%)	Classification	Classification Regulation (EC) [CLP]
1	Naphtha (petroleum), full-range alkylate, butane-contg.	68527-27-5 Index no: 649-282- 00-2	271-267-0	01- 2119471477- 29- 0021	80-97	F+, Xn, N; R12, R38, R51/53, R65, R67	Flam. Liq. 1; H224; Asp. tox 1; H304; Skin Irrit. 2; H315; STOT SE3; H336; Aquatic Chronic 2; H411;
2	Naphtha (petroleum), isomerization	64741-70-4 Index no: 649-277- 00-5	265-073-5	01- 2119480399- 24	5-15	F+, Xn, N; R12, R38, R51/53, R65,R67	Flam. Liq. 1; H224; Asp. tox 1; H304; Skin Irrit. 2; H315; STOT SE3; H336; Aquatic Chronic 2; H411;

These naphtha petroleum product contain < 0,1 vol-% benzene (CAS 71-43-2) Aromatic content max. 1%. See section 16 for the full text of the classification declared above. Occupational exposure limits are mentioned under section 8, if such exist.

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4. FIRS AID

4.1 Description of first aid measures

Inhalation	Remove casualty to fresh air and keep warm and at rest. Rinse nose, mouth and throat with water. Contact physician if symptoms according to Section 4.2 below persists. Unconsciousness: Place the unconscious in the recovery side position. Check breathing and pulse. To the hospital immediately. Give artificial respiration and /or cardiac massage if necessary.
Skin contact	Contaminated clothing may cause a fire hazard. Soak the garment in water as soon as possible and then remove them. Wash thoroughly with soap and water. Contact physician if irritation or redness persists.
Eye contact	Remove contact lenses. Hold eyelids apart. Flush with plenty of water for about 5 minutes. Call an eye specialist if symptoms persist.
Ingestion	Rinse mouth with water. Do not induce vomiting. Seek medical attention immediately if there is any suspicion of aspiration of the product into the lungs due to ingestion or vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Information for health care professionals	Aspiration of the product may cause chemical pneumonia.
Acute symptoms and effects	Inhalation: Exposure to high concentrations may cause irritation of respiratory, visual disturbances, headache, dizziness, nausea, vomiting and unconsciousness. Skin contact: Can defat the skin and cause irritation, pain, swelling and redness. May cause pain and damage to tissues and mucous membranes. The product may be absorbed through the skin. Eye Contact: May cause reversible stinging and redness. Ingestion: May cause nausea, vomiting, diarrhea and breathing difficulties. Even small amounts of this product may cause chemical pneumonia if related with ingestion or vomiting is drawn into the lungs.
Delayed symptoms and effects	Chemical pneumonia may occur as late as 1 day after exposure and can be fatal.

4.3 Indication of any immediate medical attention and special treatment needed

Medical monitoring for delayed effects	Symptomatic treatment. Chemical pneumonia may occur as far as one day after aspiration.
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5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

5.1.1 Suitable extinguishing media	Foam (trained personnel only). Mist (trained personnel only). Powder. Other inert gases (according to regulations). Sand or earth.
5.1.2 Unsuitable extinguishing media	Do NOT use direct water jet.

5.2 Special hazards arising from the substance or preparation

Extremely flammable. Vapours from product may already at ambient temperature form an explosive mixture with air. Vapours from the product are heavier than air and may accumulate on floors and low areas. Vapors may be moved to distant ignition sources through sewage and ventilation systems. All types of emissions, spills and leakage of product pose major fire and explosion hazard.

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Hazardous Combustion Products

Fire will produce black smoke containing toxic substances such as carbon monoxide, carbon dioxide, aldehydes and ketones.

5.3. Advice for firefighters

Personal protective equipment

Use chemically protective clothing and breathing apparatus.

Other Information

Containers exposed to fire should be removed immediately and /or cooled with water.

Make sure that the water does not come into contact with the fire. The product floats on water and may reignite on water surface. Make sure the emergency exits are positioned so that all the rooms can be quickly evacuated. If a leak or spill has not ignited, use water spray to disperse the vapors and protect personnel attempting to stop the leak. Make sure that the water does not come into contact with the fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

General measures

Ensure good ventilation. Avoid contact with skin and eyes and inhalation of vapors from the product.

Use personal protective equipment as shown in section 8.

Personal protective measures

Use personal protective equipment as indicated in section 8.

6.1.1 For non-emergency personnel

Protective Equipment

Actions involving any personal risk or without suitable training should not be taken. Evacuate surrounding areas.

Keep unnecessary and unprotected personnel from entering. Not touch or walk through spilled material.

Use protective equipment as indicated in section 8.

6.1.2 For emergency responders

For emergency responders

Take into account information on personal protection and hygiene measures as indicated in section 8.

6.2 Environmental precautions

Environmental protection measures

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform immediately Competent Authority if the product has been released into the environment and caused environmental hazards.

6.3 Methods and materials for containment and cleaning up

Containment

Collect spilled material in sealable ventilated containers.

Cleaning up

Contain and clean up immediately with inert absorbents such as vermiculite, sand or earth or other inert material. Shovel up spillage in sealable ventilated containers. Collected material must be disposed of as hazardous wastes, at an approved destruction plant, see section 13. Very small emissions of liquid can evaporate under supervision provided ventilation is sufficient.

Other information

Take into account that all releases of the product may cause a large fire and explosion hazard. Isolate the release from all ignition sources. Avoid generation of static electricity.

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6.4 Reference to other sections

Other instructions

Section 5 for fire hazards.

See Section 7 for handling the product.

See Section 8 for personal protective equipment.

See Section 13 for disposal of hazardous waste.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling

Ensure good ventilation. Use protective equipment as indicated in Section 8. Observe fire and explosion hazard. Make sure equipment is grounded to avoid electrical and static sparking. Especially important when pumping and sampling.

Protective measures

Measures to prevent fire

Avoid contact with ignition sources. Avoid generation of static electricity.

Measures to protect environment

Avoid release to the water and sewage. For further information see regulations given by the National and Local Authorities.

Advice on general occupational hygiene

Avoid contact with skin and eyes. Avoid inhalation of vapors from product. Manage the product so that prolonged or repeated skin contact is avoided. Wash hands before breaks and after work. Do not eat, drink or smoke. Use good personal hygiene.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Keep out of reach of children. Store the product as a flammable liquid. Keep container tightly closed. Keep only in receptacles provided for this product. Container of the product must be correctly labeled. Never remove the label or labels from the container. Avoid generation of static electricity. Do not enter storage tanks without breathing apparatus unless the tank is well ventilated. Cleaning, inspection and repair of storage tanks requires specialist skills. Contact the manufacturer for inspection and repair.

Conditions to avoid

Avoid ignition sources. Avoid static electricity. Keep away from strong oxidizers such as liquid chlorine and concentrated oxygen.

7.3 Specific end use(s)

Recommendations

Not applicable.

Specific uses

Fuel.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Further information on exposure limits

The product contains substances that have occupational exposure limits.

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Exposure Control

Occupational exposure limits

Substance	CAS Number	Exposure time	ppm	mg/m ³	Year	Country	Remark
Oil mist	--	8 h	--	1	1990	Sweden	
Oil mist	--	15 min	--	3	1990	Sweden	
n-Hexane	110-54-3	8 h	25	90	1989	Sweden	
n-Hexane	110-54-3	15 min	50	180	1989	Sweden	
Benzene	71-43-2	8 h	0,5	1,5	1990	Sweden	H, C
Benzene	71-43-2	15 min	3	9	1990	Sweden	H, C
Toulene	108-88-3	8h	50	192	2011	Sweden	
Toulene	108-88-3	15 min	100	384	2011	Sweden	

H=Can readily be absorbed through the skin, C=Carcinogenic effect

Biological limits

DNEL / PNEC

Summary of risk management, environmental

No DNEL values available.

No PNECL values available.

Safety measures to prevent exposure

Relevant environmental exposure control

Instruction on measures to avoid exposure

Use mechanical ventilation or exhaust if exposure hazards by inhalation exists.

8.2 Exposure controls

Exposure controls in workplace

Ensure good ventilation. Avoid contact with skin and eyes and inhalation of vapors from the product. Wash hands before breaks and at end of work. Do not eat, drink or smoke when handling the product. Note that vapors or gases may accumulate along the floor and in low areas, causing fire and explosion hazard.

Eye / face protection

Eye protection

If splashes into the eyes are likely to occur, face shield or tightly fitting safety goggles that protect against chemicals must be worn.

Hand Protection

Use protective gloves made of the following materials.

Chemical protection > 8h: Nitrile, Viton, Viton / Butyl rubber, Tychem BR / LV, Tychem TK.

Chemical protection 4-8h: polyvinyl alcohol, silver Shield/4H (PE / EVAL / PE) Responder.

Chemical protection 1-4h: Barrier (PE / PA / PE).

Skin protection (other than the hands)

Wear suitable protective clothing.

Respiratory protection

In case of risk of inhalation use an approved mask or full face mask with gas filter type A (brown) or breathing apparatus.

Thermal hazards

Avoid contact with ignition sources. Extremely flammable product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid. Volatile liquid.
Odour	The smell of petrol.

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Colour	Transparent.
Solubility in water	100-300 g/m ³
Solubility in organic solvents	Name: soluble in organic solvents.
Relative density	0.680 to 0.720 g/cm ³
Melting point / melting range	< 50°C
Boiling point / range	Value: 25-200 ° C
pH (product)	Not applicable.
pH (aqueous solution)	Not applicable.
Flash Point	Value: -40 ° C
Explosive Properties	Properties: May form explosive mixtures with air. Lower explosion limit with unit of measure: 1%. Upper explosion limit with unit of measure: 8%.
Autoignition temperature	> 250°C
Explosive properties	Vapours from product may already at ambient temperature form an explosive mixture with air.
Oxidizing properties	Not oxidizing.
Partition coefficient n-octanol / water:	> 3
Vapor Pressure	55-65 kPa (38°C)
Vapour density	3-4
Viscosity index:	0,6-0,9 mm ² /s (15°C)

9.2 Other information

Physical and chemical characteristics

Not available.

10. STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal use and storage conditions.
10.2 Chemical stability	Extremely flammable.
10.3 Possibility of hazardous reactions	Increased temperature, contact with the ignition sources or formation of static electricity may cause an ignition of the product.
10.4 Conditions to avoid	Avoid increased temperature. Keep away from sources of ignition. Avoid formation of static electricity.
10.5 Incompatible materials	Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen.
10.6 Hazardous decomposition products	Carbon monoxide, carbon dioxide, aldehydes and ketones.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Experimental/calculated data of the product

Exposure route	Value/unit	Animal species	Exp. time	Not
LD50, oral	> 2000 mg/kg	Rat		
LD50, dermal	> 2000 mg/kg	Rat		
LC50, inhalation	> 5 mg/l	Rat	4 h	

Other information regarding health hazards Skin contact:

Irritating to skin. Acts as a defatting agent on skin. May cause cracking of skin, and eczema.

Eye contact

Eye contact may cause reversible irritation with stinging and redness.

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Ingestion

Harmful: may cause lung damage if swallowed.

Chronic effects

Repeated and prolonged exposure to the product through inhalation can damage the central nervous system. Degreasing to skin and prolonged or repeated contact may cause irritation and possibly dermatitis. The product can also be absorbed through the skin and eventually cause damage to organs.

Aspiration hazard

Aspiration risk exists. In case of ingestion or vomiting, the product may enter the lungs and cause chemical pneumonia, which requires immediate medical care.

Sensitization

No risks of sensitizing effects exist.

Carcinogenicity

No risks of carcinogenic effects exist.

Harmful to the fetus

No risks of teratogenic effects exist.

Reproductive toxicity

No risks of reproductive toxic effects exist.

Mutagenic effects

No risks of mutagenic effects exist.

Symptoms of overexposure

Abuse by conscious inhalation of high concentrations of the product, even during a very short time, may cause consciousness or sudden death.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute toxicity of the product in the aquatic environment

Test	Value/unit (mg/l)	Test method	Exp. time	Species
Fish	10-100	--	96 h	--
Daphnia	10-100	--	48 h	Daphnia magna
Algae	10-100	--	72 h	Green algae

12.2 Persistence and degradability

Conclusion/Summary	This product is not readily biodegradable. But it is hardly soluble in water and form a surface film on water at release.
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12.3 Bioaccumulative potential

Conclusion/Summary	Bioaccumulating effect cannot be excluded.
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12.4 Mobility in soil

Low water solubility floats on water. Absorbs to soil particles.

12.5 Results of PBT and vPvB assessment

12.6 Other adverse effects

Environmental information, summary:

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The product is classified as harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

EWC Codes:

13 07 02*	Petrol
16 07 08*	Wastes containing oil
15 01 10*	Packaging containing residues of or contaminated by dangerous substances
15 01 02	Plastic packaging
15 01 04	Metallic packaging

The product is classified as hazardous waste: Yes

The package is classified as hazardous waste: Yes

13.1 Waste treatment methods

Specification of appropriate waste disposal methods	Residues, spills and uncleaned empty packaging are hazardous waste. Dispose of at an approved destruction plant. Instructions for emptying packaging: Place the container upside down inclined somewhat, about 10 degrees, for runoff in such a way that the lowest point of the package is the exit hole. On some packages you need therefore, make an extra hole. The run-off shall take place at room temperature (min 15°C). Wait until the package is drip dry. Do not reseal package after runoff.
Other information	EWC code is selected based on the type of waste generated. All contaminated materials should be regarded as extremely flammable. Empty containers may contain product residues. Do not expose containers to heat, welding or soldering. Do not remove labels or warning labels from containers. Waste from the product must not be allowed to contaminate soil or water, or be released into the environment. Note risks involved when emptying packaging and containers of flammable liquids. After draining, ventilate in a safe place away from sparks and flame. Residue may cause explosion. Do not puncture, cut or weld uncleaned packaging, containers or barrels. Packagings containing product residue and which are not drip dry must be handled as hazardous waste and disposed of properly sealed. Drip dry containers can be handled as other waste and sent for recycling in a particular fraction for such packages.

14. TRANSPORT INFORMATION

Complete Product Name: Best Fuel 4 Stroke

Product name (national): Best Fuel 4 Stroke

Dangerous goods ADR:

Status: Yes

UN-No.: 1268

Class: 3

Hazard identification number: 33

Packaging group: II

Proper Shipping Name: Petroleum distillates, N.O.S. (alkylate)

Tunnel restrictions: (D/ E)

Dangerous goods RID:

Status: Yes

UN-No.: 1268

Class: 3

Packaging group: II

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Proper Shipping Name: Petroleum distillates, N.O.S. (alkylate)

Dangerous Goods IMDG:

Status: Yes

UN-No.: 1268

Class: 3

Packaging group: II

IMDG Marine Pollutant: No

EmS: F-E, S-E

Proper Shipping Name: Petroleum distillates, N.O.S. (alkylate)

Dangerous goods ICAO / IATA:

Status: Yes

UN-No.: 1268

Class: 3

Packaging group: II

Proper Shipping Name: Petroleum distillates, N.O.S. (alkylate)

14.6 Special precautions

None

14.7 Bulk transport in accordance with annex II of convention Marpol 73/78 and IBC-Code

Other relevant information:

Not applicable.

15. REGULATORY INFORMATION

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

Other remarks:

Store the product as a extremely flammable liquid.

Legislation and Regulations:

The safety data sheet is prepared in accordance with Annex II of REACH Regulation (EC) No. 1907/2006. Classification according to EU Directive 2005:7 and Regulation (EU) No. 1272/2008 with their respective legislative changes.

15.2 Chemical Safety Assessment

CSR required:

No

16. OTHER INFORMATION

LIST OF R-PHRASES MENTIONED UNDER SECTION 2 AND 3.

No.	R-phrase
R12	Extremely flammable.
R38	Irritating to skin.
R52/53	Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.

LIST OF HAZARD STATEMENTS MENTIONED UNDER SECTION 2 AND 3

No.	Statement
H224	Extremely flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.

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H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

Responsible for safety datasheet: Lefab Produktion AB

Revision(s)

Version	Revision date	Responsible	Changes in section
v.2	May 20, 2013	Lennart Theander	2, 3, 8, 9, 11, 12 and 14
v.3	March 31, 2014	Lennart Theander	14