

SAFETY DATA SHEET



Aspen 4

SECTION 1: Identification of the substance / mixture and of the company / undertaking

Date issued	17.08.2017
Revision date	01.04.2020

1.1. Product identifier

Product name	Aspen 4
Article no.	CA- SW, IF
Extended SDS with ES incorporated	Yes
Extended SDS with ES incorporated, comments	Relevant information from component Exposure Scenarios has been incorporated into Sections 4 - 13 of this SDS.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Function	Description: Fuel
Use of the substance / preparation	Fuel for 4-stroke motors.
Relevant identified uses	SU0-2 Other activities related to manufacture and services SU1 Agriculture, forestry, fishery SU19 Building and construction work SU21 Consumer uses: Private households (= general public = consumers) SU22 Professional uses: publicly accessible (administration, education, entertainment, services, craftsmen) PC13 Fuels AC03 Machinery and related mechanical appliances
Industrial use	Yes
Professional use	Yes
Consumer use	Yes
Use of chemical, comments	Consumer use – depending on size of the container, see product label.

1.3. Details of the supplier of the safety data sheet

Distributor

Company name	Star West Petroleum Ltd.
Office address	104 – 3A Burbidge St.
Postcode	V3K 7B2
City	Coquitlam BC

Country	Canada
Telephone number	604-941-7676
Fax	604-941-7679

Producer

Company name	Lantmännen Aspen AB
Postal address	Iberovägen 2
Postcode	SE-438 54
City	Hindås
Country	Sweden
Telephone number	+46 (0)301-23 00 00, (08:00-16.30 CET)
Email	aspensds@lantmannen.com
Website	http://www.aspenfuels.com/

1.4. Emergency telephone number

Emergency telephone	Telephone number: +1 703-527-3887 Description: For emergencies only. Call CHEMTREC
Identification, comments	In an emergency situation always contact 911 Emergency Services first.

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Flam. Liq. 1; H224 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 4; H413
Additional information on classification	The mixture is classified as dangerous according to CLP (EU), consistent with Canadian WHMIS 2015, Hazardous Products Regulations (HPR).

2.2. Label elements**Hazard pictograms (CLP)**

Signal word	Danger
Hazard statements	H224 Extremely flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. to avoid static discharge. P241 Use explosion-proof [electrical / ventilating / lighting /] equipment. P280 Wear protective gloves/eye protection. P271 Use only outdoors or in a well-ventilated area. and P261 Avoid breathing vapours. P405 Store locked up. in a cool and well-ventilated place. P403+P235 Store in a well-ventilated place. Keep cool. P501 Dispose of contents / container to approved waste recipient in an open container. First aid: P303+P361+P353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water [or shower]. P332+P313 If skin irritation occurs: Get medical advice / attention. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor / other health care professional.. P331 Do NOT induce vomiting. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER / doctor / other health care professional if you feel unwell. Fire: P370+P378 In case of fire: Use water spray, foam, carbon dioxide (CO₂), dry chemical to extinguish.
Tactile warnings	Yes
Child-protection	Yes

2.3. Other hazards

Health effect	May cause nausea, headache, dizziness and poisoning. Narcosis in high concentrations. In high concentrations, vapours may irritate throat and respiratory system and cause coughing. Prolonged skin contact may cause redness, irritation and dry skin.
Other hazards	Vapours are heavier than air and may travel along the floor and in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Alkylate (CA)	CAS No.: 68527-27-5, 64741-64-6	Flam. Liq. 1; H224 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Chronic 2; H411	80 - 100 %	
Isopentane (CA)	CAS No.: 78-78-4	Flam. Liq. 1; H224 Asp. Tox. 1; H304 STOT SE 1; H336 Aquatic Chronic 2; H411 EUH 066	3 - 10 %	
2,2-Dimethylbutane (CA)	CAS No.: 75-83-2	Flam. Liq. 2; H225	1 - 5 %	

		Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 1; H336 Aquatic Chronic 2; H411	
n- Butane (CA)	CAS No.: 106-97-8	Flam. Gas 1; H220 Press. Gas; H280	0,5 -5 %
n-Pentane (CA)	CAS No.: 109-66-0	Flam. Liq. 2; H225 Asp. Tox. 1; H304 STOT SE 1; H336 Aquatic Chronic 2; H411 EUH 066	1 -5 %
2-Methylpentane CA)	CAS No.: 107-83-5	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 1; H336 Aquatic Chronic 2; H411	0,5 -1,5 %
Description of the mixture	Contains: Benzene, CAS No 71-43-2 < 0,1%, n-Hexane, CAS No 110-54-3 < 0,1%.		
Remarks, substance	Ingredients' environmental classification is not supported by tests on the mixture.		

SECTION 4: First aid measures

4.1. Description of first aid measures

General	Fire and explosion: Leave the zone of danger immediately and evacuate unnecessary personnel. Bring injured persons out of the zone of danger immediately. Beware of danger of shock in seemingly not-injured persons. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
Inhalation	Fresh air and rest. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water.
Eye contact	Immediately rinse with water for several minutes. Make sure to remove any contact lenses from the eyes before rinsing.
Ingestion	DO NOT induce vomiting. Get medical attention immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. A doctor should decide if gastric lavage is needed.

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

Acute symptoms and effects	Acts as a defatting agent on skin. May cause cracking of skin, and eczema. Risk of chemical pneumonia after aspiration. Vapour may irritate respiratory system or lungs.
Delayed symptoms and effects	Warning! This product is harmful to health. The product may be aspirated and cause chemical pneumonia that can be fatal.

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

Medical treatment	Treat Symptomatically.
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Medical monitoring for delayed effects	Central nervous system depression including narcotic effects such as drowsiness, narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
Other information	DO NOT INDUCE VOMITING! Intrusion into the lungs after ingestion or vomiting may cause chemical pneumonitis.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Improper extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	Extremely flammable liquid and vapour. Eliminate all ignition sources if safe to do so. Severe explosion hazard when vapours are exposed to flames.
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5.3. Advice for firefighters

Personal protective equipment	In case of inadequate ventilation wear respiratory protection. Use personal protective equipment as required.
Fire fighting procedures	Containers close to fire should be removed immediately or cooled with water. Avoid water in straight hose stream; will scatter and spread fire. Be aware of risk of fire re-starting, and risk of explosion.
Special protective equipment for firefighters	In case of a large fire or in restricted or poorly ventilated areas, wear comprehensive fire resistant protective clothing and SCBA breathing apparatus with full mask and positive air pressure.
Other information	Vapours are heavier than air and may travel along the floor and in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures	Do not smoke or use open fire, or other sources of ignition. Ventilate well. In case of inadequate ventilation use suitable respirator. Take precautionary measures against static discharges.
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6.2. Environmental precautions

Environmental precautionary measures	Avoid discharge into drains, water courses or onto the ground. Contain spillages with sand, earth or any suitable absorbent material. Contact local authorities in case of spillage to drain/aquatic environment.
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6.3. Methods and material for containment and cleaning up

Clean up	Absorb in vermiculite, dry sand or earth and place into containers. Cover large spillages with foam.
Other information	Remove sources of ignition. Beware of the explosion danger.

6.4. Reference to other sections

Other instructions	For waste disposal, see section 13. For personal protection, see section 8.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Flammable/combustible - Keep away from oxidisers, heat and flames. Take precautionary measures against static discharges.
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Protective safety measures

Safety measures to prevent fire	Keep cool. Keep away from heat / sparks / open flames / hot surfaces. — No smoking.
Preventive measures to prevent aerosol and dust generation	Well-ventilated area.
Preventitive measures to protect the environment	Prevent entry into drains.
Advice on general occupational hygiene	Avoid eating, drinking and smoking when using the product. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Store in tightly closed original container in a well-ventilated place. Store at temperature below 50°C. Flammable liquid storage.
Conditions to avoid	Keep away from heat, sparks and open flame.

Conditions for safe storage

Technical measures and storage conditions	Protect electric equipment against sparking in case of risk of explosion.
Advice on storage compatability	Keep flammable liquids away from flammable gas and highly flammable goods. Flammability class: 1B acc. to NFPA
Additional information on storage conditions	Large amounts and storages should be stored in accordance with national regulation on storage of flammable liquids.

7.3. Specific end use(s)

Specific use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
Isopentane (CA)	CAS No.: 78-78-4	Country of origin: CA Limit value (8 h) : 1000 ppm Source: Regulation 833, Control of Exposure to Biological or Chemical	

Agents, Ontario
Occupational Health and
Safety Regulation, section
5.48, British Columbia
Comments: As Pentane, All
isomers [78-78-4; 109-66-0;
463-82-1]

Country of origin: CA
Limit value (8 h) : 600 ppm
Limit value (8 h) : 1800 mg/
m³

Limit value (short term)

Value: 750 ppm

Limit value (short term)

Value: 2250 mg/m³

Limit value (short term)

Appraisal period: 15 min
Source: O.I.C. 1986/164,
Occupational Health and
Safety Act, Yukon
Regulations

Comments: As Pentane

Country of origin: CA
Limit value (8 h) : 600 ppm

Limit value (short term)

Value: 750 ppm

Limit value (short term)

Appraisal period: 15 min
Source: Occupational
Health and Safety
Regulations, 1996 S.S., c.
O-1.1, Reg 1. s.2,
Saskatchewan.
Occupational Health and
Safety Regulations
R-039-2015, Northwest
Territories.

Occupational Health and
Safety Regulations

R-003-2016, Nunavut.

Comments: As Pentane, all
isomers

Country of origin: CA
Limit value type: OEL
Limit value (8 h) : 600 ppm
Limit value (8 h) : 1770 mg/
m³

Source: Occupational
Health and Safety code,
Alberta reg 87/2009

Comments: As Isopentane
(Pentane, all isomers)

Country of origin: US
Limit value type: TWA

		Limit value (8 h) : 1000 ppm Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database
2,2-Dimethylbutane (CA)	CAS No.: 75-83-2	Country of origin: CA Limit value (8 h) : 200 ppm Source: Occupational Health and Safety Regulation, section 5.48, British Columbia Country of origin: CA Limit value (8 h) : 500 ppm Limit value (8 h) : 1760 mg/ m³ Limit value (short term) Value: 1000 ppm Limit value (short term) Value: 3500 mg/m³ Limit value (short term) Appraisal period: 15 min Source: Occupational Health and Safety code, Alberta reg 87/2009 Country of origin: US Limit value type: TWA Limit value (8 h) : 500 ppm Peak limitation value Peak limitation value: 1000 ppm Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database
n- Butane (CA)	CAS No.: 106-97-8	Country of origin: CA Limit value type: OEL Limit value (8 h) : 1000 ppm Source: Occupational Health and Safety code, Alberta reg 87/2009 Comments: As Butane Country of origin: CA Limit value (8 h) : 1000 ppm Exposure limit letter Letter code: EX Source: Occupational Health and Safety Regulation, section 5.48, British Columbia Comments: As Butane, all isomers Country of origin: CA Limit value (8 h) : 1000 ppm Limit value (short term) Value: 1250 ppm Limit value (short term)

Appraisal period: 15 min
Source: Occupational Health and Safety Regulations R-039-2015, Northwest Territories. Occupational Health and Safety Regulations R-003-2016, Nunavut. Occupational Health and Safety Regulations, 1996 S. S., c. O-1.1, Reg 1. s.2, Saskatchewan.
Comments: As Aliphatic hydrocarbon gases, Alkane [C1-C4]
Country of origin: CA
Limit value (8 h) : 800 ppm
Limit value (8 h) : 1900 mg/m³
Source: R.R.O. 1990, REGULATION 833 CONTROL OF EXPOSURE TO BIOLOGICAL OR CHEMICAL AGENTS, Ontario
Comments: As Butane, all isomers
Country of origin: CA
Limit value (8 h) : 800 ppm
Limit value (8 h) : 1900 mg/m³
Source: S-2.1, r. 13 - Regulation respecting occupational health and safety, Québec
Comments: As Butane
Country of origin: CA
Limit value (8 h) : 600 ppm
Limit value (8 h) : 1400 mg/m³
Limit value (short term)
Value: 750 ppm
Limit value (short term)
Value: 1600 mg/m³
Limit value (short term)
Appraisal period: 15 min
Source: O.I.C. 1986/164, Occupational Health and Safety Act, Yukon Regulations
Comments: As Butane
Country of origin: US
Limit value (8 h) : 1000 ppm
Source: ACGIH TLV®-

n-Pentane (CA)	CAS No.: 109-66-0	TWA OSHA Occupational Chemical Database Country of origin: CA Limit value (8 h) : 1000 ppm Source: Regulation 833, Control of Exposure to Biological or Chemical Agents, Ontario Occupational Health and Safety Regulation, section 5.48, British Columbia Comments: As Pentane, All isomers [78-78-4; 109-66-0; 463-82-1] Country of origin: CA Limit value (8 h) : 600 ppm Limit value (8 h) : 1800 mg/m³ Limit value (short term) Value: 750 ppm Limit value (short term) Value: 2250 mg/m³ Limit value (short term) Appraisal period: 15 min Source: O.I.C. 1986/164, Occupational Health and Safety Act, Yukon Regulations Comments: As Pentane Country of origin: CA Limit value type: TWA Limit value (8 h) : 120 ppm Limit value (8 h) : 350 mg/m³ Source: S-2.1, r. 13 - Regulation respecting occupational health and safety, Québec Country of origin: CA Limit value (8 h) : 600 ppm Limit value (short term) Value: 750 ppm Limit value (short term) Appraisal period: 15 min Source: Occupational Health and Safety Regulations, 1996 S.S., c. O-1.1, Reg 1. s.2, Saskatchewan. Occupational Health and Safety Regulations R-039-2015, Northwest Territories. Occupational Health and
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		Safety Regulations R-003-2016, Nunavut. Comments: As Pentane, all isomers Country of origin: CA Limit value type: OEL Limit value (8 h) : 600 ppm Limit value (8 h) : 1770 mg/m³ Source: Occupational Health and Safety code, Alberta reg 87/2009 Comments: As Isopentane (Pentane, all isomers) Country of origin: US Limit value type: TWA Limit value (8 h) : 1000 ppm Source: ACGIH TLV®-TWA OSHA Occupational Chemical Database
2-Methylpentane (CA)	CAS No.: 107-83-5	Country of origin: CA Limit value (8 h) : 200 ppm Source: Occupational Health and Safety Regulation, section 5.48, British Columbia Country of origin: CA Limit value (8 h) : 500 ppm Limit value (8 h) : 1760 mg/m³ Limit value (short term) Value: 1000 ppm Limit value (short term) Value: 3500 mg/m³ Limit value (short term) Appraisal period: 15 min Source: Occupational Health and Safety code, Alberta reg 87/2009 Country of origin: US Limit value type: TWA Limit value (8 h) : 500 ppm Peak limitation value Peak limitation value: 1000 ppm Source: ACGIH TLV®-TWA OSHA Occupational Chemical Database
Benzene (CA)	CAS No.: 71-43-2	Country of origin: CA Limit value type: OEL Limit value (8 h) : 0,5 ppm Limit value (8 h) : 1,6 mg/m³ Limit value (short term)

Value: 2,5 ppm

Limit value (short term)

Value: 8 mg/m³

Limit value (short term)

Appraisal period: 15 min

Exposure limit letter

Letter code: Skin A1

Source: Occupational

Health and Safety code,

Alberta reg 87/2009

Country of origin: CA

Limit value (8 h) : 0.5 ppm

Limit value (short term)

Value: 2.5 ppm

Limit value (short term)

Appraisal period: 15 min

Exposure limit letter

Letter code: Skin A1 1

Source: Occupational

Health and Safety

Regulation, section 5.48,

British Columbia

Country of origin: CA

Limit value (8 h) : 0,5 ppm

Limit value (short term)

Value: 2,5 ppm

Limit value (short term)

Appraisal period: 15 min

Exposure limit letter

Letter code: Skin

Source: Regulation 833,

Control of Exposure to

Biological or Chemical

Agents, Ontario

Country of origin: CA

Limit value (8 h) : 1 ppm

Limit value (8 h) : 3 mg/m³

Limit value (short term)

Value: 5 ppm

Limit value (short term)

Value: 15,5 mg/m³

Limit value (short term)

Appraisal period: 15 min

Exposure limit letter

Letter code: C1 RP EM

Source: S-2.1, r. 13 -

Regulation respecting

occupational health and

safety, Québec

Country of origin: CA

Limit value (8 h) : 10 ppm

Limit value (8 h) : 32 mg/m³

Exposure limit letter

Letter code: C

		Source: O.I.C. 1986/164, Occupational Health and Safety Act, Yukon Regulations Country of origin: US Limit value (8 h) : 0,5 ppm Limit value (short term) Value: 2,5 ppm Limit value (short term) Appraisal period: 15 min Exposure limit letter Letter code: Skin TLV-A1 Source: ACGIH TLV®-TWA OSHA Occupational Chemical Database
n-Hexane (CA)	CAS No.: 110-54-3	Country of origin: CA Limit value (8 h) : 50 ppm Limit value (8 h) : 176 mg/m³ Exposure limit letter Letter code: May be readily absorbed through skin. Source: Occupational Health and Safety code, Alberta reg 87/2009 S-2.1, r. 13 - Regulation respecting occupational health and safety, Québec Country of origin: CA Limit value (8 h) : 20 ppm Exposure limit letter Letter code: Skin Source: Occupational Health and Safety Regulation, section 5.48, British Columbia Country of origin: CA Limit value (8 h) : 50 ppm Limit value (short term) Value: 62,5 ppm Limit value (short term) Appraisal period: 15 min Exposure limit letter Letter code: Skin Source: R-039-2015, Occupational health and safety regulations, Northwest Territories and Nunavut The Occupational Health and Safety Regulations, 1996, Saskatchewan Comments: As Hexane (n-Hexane)

Country of origin: CA
 Limit value (8 h) : 50 ppm
 Limit value (8 h) : 176 mg/
 m³
 Source: Regulation 833,
 Control of Exposure to
 Biological or Chemical
 Agents, Ontario
 Country of origin: CA
 Limit value (8 h) : 100 ppm
 Limit value (8 h) : 360 mg/
 m³
Limit value (short term)
 Value: 125 ppm
Limit value (short term)
 Value: 450 mg/m³
Limit value (short term)
 Appraisal period: 15 min
 Source: O.I.C. 1986/164,
 Occupational Health and
 Safety Act, Yukon
 Regulations
 Comments: As Hexane
 (n-Hexane)

Country of origin: US
 Limit value (8 h) : 50 ppm
 Source: ACGIH TLV®-
 TWA OSHA Occupational
 Chemical Database

Toluene (CA) CAS No.: 108-88-3

Country of origin: CA
 Limit value (8 h) : 188 ppm
Exposure limit letter
 Letter code: May be readily
 absorbed through skin.
 Source: Occupational
 Health and Safety code,
 Alberta reg 87/2009
 Country of origin: CA
 Limit value (8 h) : 20 ppm
 Source: Occupational
 Health and Safety
 Regulation, section 5.48,
 British Columbia
 Country of origin: CA
 Limit value (8 h) : 50 ppm
Limit value (short term)
 Value: 60 ppm
Limit value (short term)
 Appraisal period: 15 min
Exposure limit letter
 Letter code: Skin
 Source: R-039-2015,
 Occupational health and
 safety regulations,

Northwest Territories and
Nunavut

The Occupational Health
and Safety Regulations,
1996, Saskatchewan

Country of origin: CA

Limit value (8 h) : 50 ppm

Source: Regulation 833,
Control of Exposure to
Biological or Chemical
Agents, Ontario

Comments: As
methylbenzene.

Country of origin: CA

Limit value (8 h) : 50 ppm

Limit value (8 h) : 188 mg/
m³

Exposure limit letter

Letter code: Skin

Source: S-2.1, r. 13 -
Regulation respecting
occupational health and
safety, Québec

Country of origin: CA

Limit value (8 h) : 100 ppm

Limit value (8 h) : 375 mg/
m³

Limit value (short term)

Value: 150 ppm

Limit value (short term)

Value: 560 mg/m³

Limit value (short term)

Appraisal period: 15 min

Exposure limit letter

Letter code: Skin

Source: O.I.C. 1986/164,
Occupational Health and
Safety Act, Yukon
Regulations

Country of origin: US

Limit value (8 h) : 20 ppm

Exposure limit letter

Letter code: BEI®

Source: ACGIH TLV®-
TWA OSHA Occupational
Chemical Database

8.2. Exposure controls

Safety signs



Precautionary measures to prevent exposure

Appropriate engineering controls	Do not handle near food and drink. Provide access to washing facilities incl. soap, skin cleanser and fatty cream. Observe occupational exposure limits and minimise the risk of inhalation of vapours and mist.
Technical measures to prevent exposure	Provide adequate general and local exhaust ventilation. Provide eyewash station and safety shower.

Eye / face protection

Additional eye protection measures	Contact lenses should not be worn when working with this chemical!
Eye protection, comments	Wear approved chemical safety goggles where eye exposure is reasonably probable.

Hand protection

Suitable materials	Nitrile.
Required properties for hand protection	EN ISO 374. EN 420
Breakthrough time	Value: > 8 hour(s)
Thickness of glove material	Value: ≥ 0.4 mm
Hand protection, comments	Protective gloves should be used if there is a risk of direct contact or splash. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Skin protection

Suitable protective clothing	Wear appropriate clothing to prevent reasonably probable skin contact.
Additional skin protection measures	Wash promptly with soap & water if skin becomes contaminated.
Skin protection remark	Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Please note that contaminated clothing may present a risk of fire and / or explosion. Personal protection must be kept separate from other clothes.

Respiratory protection

Respiratory protection necessary at	Under normal conditions of use respiration protection should not be required.
Tasks needing respiratory protection	In case of inadequate ventilation wear respiratory protection. Respiratory protection must be used if air contamination exceeds acceptable level.
Recommended type of equipment	Use respiratory equipment with gas filter, type AX. EN 140.
Additional respiratory protection measures	All handling to take place in well-ventilated area.
Respiratory protection, comments	Filter with half mask. Filter equipment may be used for a maximum of 2 hours per time.

Hygiene / environmental

Specific hygiene measures	Promptly remove non-impervious clothing that becomes wet. DO NOT SMOKE IN WORK AREA!
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Appropriate environmental exposure control

Environmental exposure controls	Should be prevented from entering drains. Inform Authorities if large amounts are involved.
Environmental exposure controls, comments	VOC.

Exposure controls

Safety measures for consumer use of the chemical	This product is not to be used under conditions of poor ventilation. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Do not store tobacco, food or beverage in work rooms or areas where the product is used.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Clear liquid
Colour	Water-white.
Odour	Gasoline
pH	Status: In delivery state Comments: Not relevant. Status: In aqueous solution Comments: Not relevant.
Melting point / melting range	Comments: Not relevant.
Boiling point / boiling range	Value: 30 -205 °C Method: EN ISO 3405 Value: 75 °C Method: NFPA®30 (USA)
Flash point	Value: -45 °C
Evaporation rate	Value: > 1000 Method: BuAc=100
Lower explosion limit with unit of measurement	Value: 1 vol%
Upper explosion limit with units of measurement	Value: 8 vol%
Vapour pressure	Value: 55 - 65 kPa Method: EN 13016-1 Temperature: = 37.8 °C
Vapour density	Value: > 1

	Reference gas: Air.
Relative density	Value: 690 - 720 kg/m ³ Method: EN ISO 12185
Solubility	Comments: Very soluble in: Hydrocarbons. Comments: Solubility: > 1 - 6 mg/l
Partition coefficient: n-octanol/ water	Value: 4,3 - 4,8 Comments: Calculated value for mixture.
Spontaneous combustability	Value: > 300 °C
Viscosity	Value: < 1 mm ² /s Temperature: = 40 °C

9.2. Other information

Physical hazards

Flammable liquids	Classification: H224 Extremely flammable liquid and vapour.
Conductivity	Value: 0.0002 µS/m Method: EN 15938 Comments: (200 pS/m) Temperature: = 20 °C
Gas group	Comments: IIA.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable under normal temperature conditions and recommended use.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No recommendation given.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid direct sunlight. Take precautionary measures against static discharge.
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10.5. Incompatible materials

Materials to avoid	Avoid contact with oxidising agents.
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10.6. Hazardous decomposition products

Hazardous decomposition products	None under normal conditions.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Substance	Alkylate (CA)
Acute toxicity	Type of toxicity: Acute Effect tested: LD50 Route of exposure: Oral Method: OECD 401 Value: > 5000 mg/kg Animal test species: Rat Comments: 68527-27-5 Type of toxicity: Acute Effect tested: LC50 Route of exposure: Inhalation. Method: OECD 403 Value: > 5610 mg/m³ Animal test species: Rat Comments: 68527-27-5 Effect tested: LD50 Route of exposure: Dermal Method: OECD 402 Value: > 2000 mg/kg bw Animal test species: Rabbit Comments: 68527-27-5 Effect tested: LD50 Route of exposure: Oral Value: > 5000 mg/kg Animal test species: Rat Comments: 64741-64-6 Effect tested: LD50 Route of exposure: Dermal Value: > 2000 mg/kg Animal test species: Rabbit Comments: 64741-64-6 Effect tested: LC50 Route of exposure: Inhalation. Value: > 5.2 mg/l Animal test species: Rat Test reference: 4 hr Comments: 64741-64-6
Substance	Isopentane (CA)
Acute toxicity	Type of toxicity: Acute Route of exposure: Oral Method: Read-across: n-pentane. Value: > 2000 mg/kg Animal test species: Rat Type of toxicity: Acute

	Route of exposure: Oral Method: Read-across: cyclopentane. Value: > 5000 mg/kg Animal test species: Rat Type of toxicity: Acute Route of exposure: Inhalation. Method: Read-across: cyclopentane. Value: > 25.3 mg/l Animal test species: Rat Type of toxicity: Subchronic Effect tested: NOEC Route of exposure: Inhalation. Value: > 2220 ppm Animal test species: Rat Comments: Organ. Type of toxicity: Chronic Effect tested: NOEC Route of exposure: Inhalation. Value: > 6646 ppm Animal test species: Rat Comments: Neurological.
Substance	n- Butane (CA)
Acute toxicity	Effect tested: LC50 Route of exposure: Inhalation. Method: Calculated. Value: > 20 mg/l
Substance	n-Pentane (CA)
Acute toxicity	Type of toxicity: Acute Route of exposure: Oral Method: Read-across: n-pentane. Value: > 2000 mg/kg Animal test species: Rat Type of toxicity: Acute Route of exposure: Oral Method: Read-across: cyclopentane. Value: > 5000 mg/kg Animal test species: Rat Type of toxicity: Acute Route of exposure: Inhalation. Method: Read-across: cyclopentane. Value: > 25.3 mg/l Animal test species: Rat
Other information regarding health hazards	
Substance	Alkylate (CA)
Skin corrosion / irritation test result	Toxicity type: Skin corrosion

	Method: OECD 404 Evaluation result: Prolonged contact may cause redness, irritation and cracking. 64741-64-6 Comments: Irritating to respiratory system. The product causes irritation of mucous membranes and may cause abdominal discomfort if swallowed. 68527-27-5
Skin corrosion / irritation, other information	Irritating to skin. Gas or vapour may irritate respiratory system. Liquid irritates mucous membranes and may cause abdominal pain if swallowed.
Eye damage or irritation other information	May cause minor irritation on eye contact.
Inhalation	Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing. In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Product has a defatting effect on skin. Prolonged or repeated contact leads to drying of skin.
Ingestion	Harmful: may cause lung damage if swallowed.
Germ cell mutagenicity	Comments: Contains <0.1% benzene. The product does not need to be classified as Carcinogen, Mutagen or Reproductions toxic (CMR) due to low concentrations of components suspected or known to be CMR.
Carcinogenicity	Comments: Contains <0.1% benzene. The product does not need to be classified as Carcinogen, Mutagen or Reproductions toxic (CMR) due to low concentrations of components suspected or known to be CMR.
Reproductive toxicity	Comments: Contains <0.1% benzene. The product does not need to be classified as Carcinogen, Mutagen or Reproductions toxic (CMR) due to low concentrations of components suspected or known to be CMR.
Assessment of specific target organ toxicity - single exposure, classification	Central nervous system depression including narcotic effects such as drowsiness, narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
Aspiration hazard, comments	Risk of chemical pneumonia after aspiration.

Symptoms of exposure

In case of ingestion	Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract. Pneumonia may be the result if vomited material containing solvents reaches the lungs.
In case of skin contact	Defatting, drying and cracking of skin.
In case of inhalation	Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.
Other information	In case of overexposure, organic solvents may depress the central nervous system causing dizziness and intoxication, and at very high concentrations unconsciousness and death.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity, fish	Value: > 100 mg/l Test duration: 96h Species: Danio rerio Method: OECD TG no. 203 (2004) Test reference: Test report 046/13. Comments: LL50.Results for the mixture.
Aquatic toxicity, algae	Value: > 100 mg/l Test duration: 72h Species: Raphidocoeles subcapitata Method: OECD TG no. 202 Test reference: Test report 182/06. Comments: EL50. Results for mixture.
Aquatic toxicity, crustacean	Value: > 1000 mg/l Test duration: 48h Species: Daphnia Magna Method: OECD Tg no. 201 Test reference: Test report 31/04. Comments: EL50. Data applies to formulation mixture.

12.2. Persistence and degradability

Persistence and degradability description/evaluation	Volatile substances are degraded in the atmosphere within a few days. The product is degraded completely by photochemical oxidation. The product has not proven to be degradable under anaerobic conditions.
Chemical oxygen demand (COD)	Comments: Not known.
Biological oxygen demand (BOD)	Comments: Not known.

12.3. Bioaccumulative potential

Bioconcentration factor (BCF)	Value: 4,3 - 4,8 Method: Log Kow Comments: Calculated value for mixture.
Bioaccumulation, evaluation	Possibly bioaccumulative, based on the data on the ingredients.

12.4. Mobility in soil

Mobility	The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. The product is insoluble in water and will spread on the water surface.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This product does not contain any PBT or vPvB substances.
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12.6. Other adverse effects

Additional ecological information	May cause long lasting harmful effects to aquatic life.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the contaminated packaging	Make sure containers are empty before discarding (explosion risk). Vent to atmosphere. Dispose of contents/container to approved waste recipient in an open container.
EWC waste code	EWC waste code: 130702 petrol Classified as hazardous waste: Yes
EWL packing	EWC waste code: 150110 packaging containing residues of or contaminated by dangerous substances Classified as hazardous waste: Yes
EU Regulations	2008/98/EG
National regulations	Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33)
National waste group	H3 (Flammable liquids, appendix 6, Guide to Hazardous Waste and Hazardous Recyclable Material Classification)
Other information	Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority. The packaging must be empty (drop-free, when inverted).

SECTION 14: Transport information

Dangerous goods	Yes
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14.1. UN number

ADR/RID/ADN	1203
IMDG	1203
ICAO/IATA	1203
Comments	Compliance with TDG Regulations incl. amdt SOR/2017-253

14.2. UN proper shipping name

Proper shipping name English	PETROL
ADR/RID/ADN	PETROL
IMDG	PETROL
ICAO/IATA	PETROL

14.3. Transport hazard class(es)

ADR/RID/ADN	3
Classification code ADR/RID/ADN	F1
IMDG	3
ICAO/IATA	3

14.4. Packing group

ADR/RID/ADN	II
IMDG	II

ICAO/IATA	II
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14.5. Environmental hazards

ADR/RID/ADN	No
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IMDG	No
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ICAO/IATA	No
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14.6. Special precautions for user

Special safety precautions for user	See other information.
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14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Transport in bulk (yes/no)	No
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Additional information

Hazard label ADR/RID/ADN	3
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Hazard label IMDG	3
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Hazard label ICAO/IATA	3
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ADR/RID Other information

Tunnel restriction code	D/E
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Transport category	2
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Hazard No.	33
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IMDG Other information

EmS	F-E, S-E
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ICAO/IATA Other information

Other transport, general	ERG 128 (CANADA)
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SECTION 15: Regulatory information

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

References (laws/regulations)	Chemicals (Hazard Information & Packaging) Regulations. Workplace Hazardous Materials Information System (WHMIS): 2015 Hazardous Products Act (R.S.C., 1985, c. H-3) Hazardous Products Regulations (SOR/2015-17) UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Directive 2008/98 / EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and
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mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.
 Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33) with amendments
 Transportation of Dangerous Goods Act, 1992 (1992, c. 34) with amendments

15.2. Chemical safety assessment

Chemical safety assessment performed	No
Exposure scenario comments	Relevant information from component Exposure Scenarios has been incorporated into Sections 4 - 13 of this SDS.

SECTION 16: Other information

Supplier's notes	The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.
List of relevant H-phrases (Section 2 and 3)	EUH 066 Repeated exposure may cause skin dryness or cracking. H220 Extremely flammable gas. H224 Extremely flammable liquid and vapour. H225 Highly flammable liquid and vapour. H280 Contains gas under pressure; may explode if heated. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects. H413 May cause long lasting harmful effects to aquatic life.
Key literature references and sources for data	Test report 31/04. Aspen 4T, Daphnia magna immobilisation test. Toxicon AB (2004). Test report 182/06. Toxicity testing of Aspen 4T, Algae growth inhibition test. Toxicon AB (2007). Test report 07-25. Evaluation of the aerobic biodegradability of organic compounds 182/06 (Aspen 4T). AnoxKaldnes AB (2007). Test report 046/13. Aspen 4. Fish, acute toxicity test. Toxicon AB (2013). Examination essay. Diffusion of alkylate petrol during discharge in the environment. Gunilla Henriksson, Annalena Tåmt (2004). Kemiska Ämnen. Prevent AB (2013).
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