

SAFETY DATA SHEET



Aspen 4

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

Date issued	17.08.2017
Revision date	18.01.2019

1.1. Product identifier

Product name	Aspen 4
Article no.	CA- SW
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
The chemical can be used by the general public	Yes

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, (08:00-17:00 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 substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Flam. Liq. 1 Asp. tox. 1 Skin Irrit. 2 STOT SE 3 Aquatic Chronic 4 H224 H304 H315 H336 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	P102 Keep out of reach of children. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P260 Do not breathe dust / fume / gas / mist / vapours / spray. P262 Do not get in eyes, on skin, or on clothing. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor / or other health care professional.. P331 Do NOT induce vomiting. P501 Dispose of contents / container to approved waste disposal site in an unsealed container.
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
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 %
Isomerate (CA)	CAS No.: 64741-70-4	Flam. Liq. 1; H224 Asp. tox. 1; H304 Aquatic Chronic 2; H411 Skin Irrit. 2; H315 STOT SE 3; H336	7 -30 %
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	0,1 -1,5 %
Description of the mixture	Contains: Benzene < 0,1%, n-Hexane < 3%.		
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.
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	Highly 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 adsorbent 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.
Preventitive 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.
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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 compatibility	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	Value	TWA Year
Alkylate (CA)	CAS No.: 68527-27-5, 64741-64-6	Country of origin: CA	
		Limit value type: OEL	
		TWA (8h) : 300 ppm	
		TWA (8h) : 1400 mg/m ³	
		Source: Occupational Health and Safety code, Alberta reg 87/2009	
		Comments: As Octane, all isomers.	
		Country of origin: CA	
		TWA (8h) : 300 ppm	
		Source: Occupational Health and Safety Regulation, section 5.48, British Columbia	
		Comments: As Octane, all isomers.	
		Country of origin: CA	
		TWA (8h) : 300 ppm	
		OEL short term value	
		Value: 375 ppm	
		OEL short term value	
		Appraisal period: 15 min	
		Source: R-039-2015, Occupational health and	

safety regulations,
Northwest Territories and
Nunavut

The Occupational Health
and Safety Regulations,
1996, Saskatchewan

Comments: As Octane, all
isomers.

Country of origin: CA

TWA (8h) : 300 ppm

TWA (8h) : 1400 mg/m³

OEL short term value

Value: 375 ppm

OEL short term value

Value: 1750 mg/m³

OEL short term value

Appraisal period: 15 min

Source: Regulation 833,

Control of Exposure to
Biological or Chemical
Agents, Ontario

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

Comments: As Octane.

Country of origin: CA

TWA (8h) : 300 ppm

TWA (8h) : 1450 mg/m³

OEL short term value

Value: 375 ppm

OEL short term value

Value: 1800 mg/m³

OEL short term value

Appraisal period: 15 min

Source: O.I.C. 1986/164,

Occupational Health and
Safety Act, Yukon

Regulations

Comments: As Octane.

Country of origin: US

TWA (8h) : 300 ppm

Source: ACGIH TLV®- TWA

OSHA Occupational

Chemical Database

Comments: As Octane.

Isomerate (CA)

CAS No.: 64741-70-4

Country of origin: CA

TWA (8h) : 500 ppm

TWA (8h) : 1760 mg/m³

OEL short term value

Value: 1000 ppm

OEL short term value

Value: 3500 mg/m³

OEL short term value

Appraisal period: 15 min

Source: Occupational Health and Safety code, Alberta reg 87/2009
S-2.1, r. 13 - Regulation respecting occupational health and safety, Québec
Comments: As Hexane (all isomers except n-hexane)
Country of origin: CA
TWA (8h) : 200 ppm
Source: Occupational Health and Safety Regulation, section 5.48, British Columbia
Comments: As Hexane (all isomers except n-hexane)
Country of origin: CA
TWA (8h) : 500 ppm
OEL short term value
Value: 1000 ppm
OEL short term value
Appraisal period: 15 min
Source: R-039-2015, Occupational health and safety regulations, Northwest Territories and Nunavut
The Occupational Health and Safety Regulations, 1996, Saskatchewan
Comments: As Hexane (other isomers)
Country of origin: CA
TWA (8h) : 500 ppm
TWA (8h) : 1760 mg/m³
OEL short term value
Value: 1000 ppm
OEL short term value
Value: 3520 mg/m³
OEL short term value
Appraisal period: 15 min
Source: Regulation 833, Control of Exposure to Biological or Chemical Agents, Ontario
Comments: As Hexane, other isomers of
Country of origin: US
Limit value type: TWA
TWA (8h) : 500 ppm
OEL short term value
Value: 1000 ppm
OEL short term value
Appraisal period: 15 min

		Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database Comments: As Hexane (all isomers except n-hexane)
n- Butane (CA)	CAS No.: 106-97-8	Country of origin: CA Limit value type: OEL TWA (8h) : 1000 ppm Source: Occupational Health and Safety code, Alberta reg 87/2009 Comments: As Butane Country of origin: CA TWA (8h) : 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 TWA (8h) : 1000 ppm OEL short term value Value: 1250 ppm OEL short term value Appraisal period: 15 min Source: R-039-2015, Occupational health and safety regulations, Northwest Territories and Nunavut The Occupational Health and Safety Regulations, 1996, Saskatchewan Comments: As Aliphatic hydrocarbon gases, Alkane [C1-C4] Country of origin: CA TWA (8h) : 800 ppm TWA (8h) : 1900 mg/m ³ Source: Ontario Reg. 833, BC Guidelines Comments: As Butane, all isomers Country of origin: CA TWA (8h) : 800 ppm TWA (8h) : 1900 mg/m ³ Source: S-2.1, r. 13 - Regulation respecting occupational health and safety, Québec Comments: As Butane

		<p>Country of origin: CA TWA (8h) : 600 ppm TWA (8h) : 1400 mg/m³ OEL short term value Value: 750 ppm OEL short term value Value: 1600 mg/m³ OEL short term value Appraisal period: 15 min Source: O.I.C. 1986/164, Occupational Health and Safety Act, Yukon Regulations Comments: As Butane Country of origin: US TWA (8h) : 1000 ppm Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database</p>
Isopentane (CA)	CAS No.: 78-78-4	<p>Country of origin: CA TWA (8h) : 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 TWA (8h) : 600 ppm TWA (8h) : 1880 mg/m³ OEL short term value Value: 750 ppm OEL short term value Value: 2250 mg/m³ OEL short term value Appraisal period: 15 min Source: O.I.C. 1986/164, Occupational Health and Safety Act, Yukon Regulations Comments: As Pentane Country of origin: CA TWA (8h) : 600 ppm OEL short term value Value: 750 ppm OEL short term value Appraisal period: 15 min Source: The Occupational Health and Safety Regulations, 1996,</p>

		<p>Saskatchewan R-039-2015, Occupational health and safety regulations, Northwest Territories and Nunavut Comments: As Pentane, all isomers Country of origin: CA Limit value type: OEL TWA (8h) : 600 ppm TWA (8h) : 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 TWA (8h) : 1000 ppm Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database</p>
Benzene (CA)	CAS No.: 71-43-2	<p>Country of origin: CA Limit value type: OEL TWA (8h) : 0,5 ppm TWA (8h) : 1,6 mg/m³ OEL short term value Value: 2,5 ppm OEL short term value Value: 8 mg/m³ OEL short term value 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 TWA (8h) : 0.5 ppm OEL short term value Value: 2.5 ppm OEL short term value 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 TWA (8h) : 0,5 ppm OEL short term value Value: 2,5 ppm OEL short term value</p>

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

TWA (8h) : 1 ppm

TWA (8h) : 3 mg/m³

OEL short term value

Value: 5 ppm

OEL short term value

Value: 15,5 mg/m³

OEL short term value

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

TWA (8h) : 10 ppm

TWA (8h) : 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

TWA (8h) : 0,5 ppm

OEL short term value

Value: 2,5 ppm

OEL short term value

Appraisal period: 15 min

Exposure limit letter

Letter code: Skin TLV-A1

Source: ACGIH TLV®- TWA
OSHA Occupational
Chemical Database

Country of origin: CA

TWA (8h) : 50 ppm

TWA (8h) : 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

n-Hexane (CA)

CAS No.: 110-54-3

		<p>Country of origin: CA TWA (8h) : 20 ppm Exposure limit letter Letter code: Skin Source: Occupational Health and Safety Regulation, section 5.48, British Columbia Country of origin: CA TWA (8h) : 50 ppm OEL short term value Value: 62,5 ppm OEL short term value 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 TWA (8h) : 50 ppm TWA (8h) : 176 mg/m³ Source: Regulation 833, Control of Exposure to Biological or Chemical Agents, Ontario Country of origin: CA TWA (8h) : 100 ppm TWA (8h) : 360 mg/m³ OEL short term value Value: 125 ppm OEL short term value Value: 450 mg/m³ OEL short term value 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 TWA (8h) : 50 ppm Source: ACGIH TLV®- TWA OSHA Occupational Chemical Database Country of origin: CA</p>
Toluene (CA)	CAS No.: 108-88-3	

TWA (8h) : 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

TWA (8h) : 20 ppm

Source: Occupational Health and Safety Regulation, section 5.48, British Columbia

Country of origin: CA

TWA (8h) : 50 ppm

OEL short term value

Value: 60 ppm

OEL short term value

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

TWA (8h) : 50 ppm

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

Comments: As methylbenzene.

Country of origin: CA

TWA (8h) : 50 ppm

TWA (8h) : 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

TWA (8h) : 100 ppm

TWA (8h) : 375 mg/m³

OEL short term value

Value: 150 ppm

OEL short term value

Value: 560 mg/m³

OEL short term value

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

TWA (8h) : 20 ppm

Exposure limit letter

Letter code: BEI®

Source: ACGIH TLV®- TWA

OSHA Occupational

Chemical Database

Petroleum (CA)

DNEL / PNEC

Substance

Alkylate (CA)

DNEL

Group: Professional**Route of exposure:** Acute inhalation (systemic)**Value:** 1300 mg/m³**Comments:** 15 min**Comments:** 68527-27-5**Group:** Professional**Route of exposure:** Acute inhalation (local)**Value:** 1100 mg/m³**Comments:** 15 min**Comments:** 68527-27-5**Group:** Professional**Route of exposure:** Long-term inhalation (local)**Value:** 840 mg/m³**Comments:** 8 h**Comments:** 68527-27-5**Group:** Consumer**Route of exposure:** Acute inhalation (systemic)**Value:** 1200 mg/m³**Comments:** 15 min**Comments:** 68527-27-5**Group:** Consumer**Route of exposure:** Acute inhalation (local)**Value:** 640 mg/m³**Comments:** 15 min**Comments:** 68527-27-5**Group:** Consumer**Route of exposure:** Long-term inhalation (local)**Value:** 180 mg/m³**Comments:** 24 h**Comments:** 68527-27-5

Substance	Isomerate (CA)
DNEL	<p>Group: Professional Route of exposure: Acute inhalation (systemic) Value: 1300 mg/m³ Comments: 15 min</p> <p>Group: Professional Route of exposure: Acute inhalation (local) Value: 1100 mg/m³ Comments: 15 min</p> <p>Group: Professional Route of exposure: Long-term inhalation (local) Value: 840 mg/m³ Comments: 8 h</p> <p>Group: Consumer Route of exposure: Acute inhalation (systemic) Value: 1200 mg/m³ Comments: 15 min</p> <p>Group: Consumer Route of exposure: Acute inhalation (local) Value: 640 mg/m³ Comments: 15 min</p> <p>Group: Consumer Route of exposure: Long-term inhalation (systemic) Value: 180 mg/m³ Comments: (24 h)</p>
Substance	Isopentane (CA)
DNEL	<p>Group: Professional Route of exposure: Long-term dermal (systemic) Value: 432 mg/kg bw/day</p> <p>Group: Consumer Route of exposure: Long-term dermal (systemic) Value: 214 mg/kg bw/day</p> <p>Group: Professional Route of exposure: Long-term inhalation (systemic) Value: 3000 mg/m³</p> <p>Group: Consumer Route of exposure: Long-term inhalation (systemic) Value: 643 mg/m³</p> <p>Route of exposure: Long-term oral (systemic) Value: 214 mg/kg bw/day</p> <p>Value: 1296 mg/kg bw/day Comments: NOAEL</p> <p>Value: 1070 mg/kg bw/day Comments: NOAEL</p>

PNEC

Value: 9000 mg/m³**Comments:** NOAEC**Value:** 3215 mg/m³**Comments:** NOAEC**Value:** 1070 mg/kg bw/day**Comments:** NOAEL DNELs are derived from the Indicative Occupational Exposure Limit (IOEL) for Pentane, Isopentane, and Neopentane**Route of exposure:** Freshwater**Comments:** 2.6 x 10⁽⁻⁶⁾ mg/l**Route of exposure:** Saltwater**Value:** 0.0000055 µg/l**Comments:** 5.5 x 10⁽⁻⁹⁾ mg/l**Route of exposure:** Freshwater sediments**Value:** 0.0036 µg/l**Comments:** 3.6 x 10⁽⁻⁶⁾ mg/kg**Route of exposure:** Saltwater sediments**Comments:** 6.7 x 10⁽⁻⁹⁾ mg/l**Route of exposure:** Soil**Comments:** 1.6 x 10⁽⁻⁸⁾ mg/kg**Comments:** Natural**Route of exposure:** Soil**Comments:** 3.5 x 10⁽⁻⁸⁾ mg/kg**Comments:** Agricultural.**Route of exposure:** Water**Comments:** 1.3 x 10⁽⁻⁶⁾ mg/l**Route of exposure:** Air**Comments:** 9.2 x 10⁽⁻⁵⁾ mg/m³**Comments:** PNEC for isopentane has been derived using the HC5 statistical extrapolation method and the target lipid model.

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: \geq 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.

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.
Specific gravity	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
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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

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

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 SE, classification	Central nervous system depression including narcotic effects such as drowsiness, narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
Aspiration hazard due to hydrocarbon content, comments	H304 May be fatal if swallowed and enters airways.
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

Acute aquatic, 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.
Acute aquatic, algae	Value: > 100 mg/l Test duration: 72h Species: Raphidoceles subcapitata Method: OECD TG no. 202 Test reference: Test report 182/06. Comments: EL50. Results for mixture.
Acute aquatic, Daphnia	Value: > 1000 mg/l Test duration: 48h Species: Daphnia Magna Method: OECD Tg no. 201

Substance	Test reference: Test report 31/04. Comments: EL50. Data applies to formulation mixture. Alkylate (CA)
Toxicity to bacteria	Value: > 15.41 mg/l Effect dose concentration : LL50 Exposure time: 72 hour(s) Species: Tetrahymena pyriformis Method: QSAR Petrotox Comments: 64741-64-6

12.2. Persistence and degradability

Chemical oxygen demand (COD)	Comments: Not known.
Biological oxygen demand (BOD)	Comments: Not known.
Persistence and degradability, comments	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.

12.3. Bioaccumulative potential

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

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

PBT assessment results	Not Classified as PBT/vPvB by current EU criteria.
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12.6. Other adverse effects

Other adverse effects, comments	May cause long lasting harmful effects to aquatic life.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Make sure containers are empty before discarding (explosion risk). Vent to atmosphere. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority.
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

14.2. UN proper shipping name

Proper shipping name english ADR / RID / ADN	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

14.5. Environmental hazards

ADR / RID / ADN	No
IMDG	No
ICAO / IATA	No

14.6. Special precautions for user

Special safety precautions for user See other information.

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

Transport in bulk (yes/no) No

Additional information

ADR / RID / ADN hazard label	3
IMDG Hazard label	3
ICAO / IATA Hazard label	3
Additional information	Compliance with TDG Regulations incl. amdt SOR/2017-253

ADR / RID - Other information

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

IMDG / ICAO / IATA Other information

EmS	F-E, S-E
Other transport, general	ERG 128 (CANADA)

SECTION 15: Regulatory information

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

References (laws/regulations)	<p>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 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</p>
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15.2. Chemical safety assessment

Chemical safety assessment performed	Yes
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)	<p>EUH 066 Repeated exposure may cause skin dryness or cracking.</p> <p>H220 Extremely flammable gas.</p> <p>H224 Extremely flammable liquid and vapour.</p> <p>H225 Highly flammable liquid and vapour.</p> <p>H280 Contains gas under pressure; may explode if heated.</p> <p>H304 May be fatal if swallowed and enters airways.</p> <p>H315 Causes skin irritation.</p> <p>H336 May cause drowsiness or dizziness.</p> <p>H361d Suspected of damaging the unborn child.</p> <p>H373 May cause damage to organs through prolonged or repeated exposure</p> <p>H411 Toxic to aquatic life with long lasting effects.</p> <p>H412 Harmful to aquatic life with long lasting effects.</p> <p>H413 May cause long lasting harmful effects to aquatic life.</p>
Key literature references and sources for data	<p>Test report 31/04. Aspen 4T, Daphnia magna immobilisation test. Toxicon AB (2004).</p> <p>Test report 182/06. Toxicity testing of Aspen 4T, Algae growth inhibition test. Toxicon AB (2007).</p> <p>Test report 07-25. Evaluation of the aerobic biodegradability of organic compounds 182/06 (Aspen 4T). AnoxKaldnes AB (2007).</p> <p>Test report 046/13. Aspen 4. Fish, acute toxicity test. Toxicon AB (2013).</p> <p>Examination essay. Diffusion of alkylate petrol during discharge in the environment. Gunilla Henriksson, Annalena Tåmt (2004).</p> <p>Kemiska Ämnen. Prevent AB (2013).</p>
Information added, deleted or revised	<p>Change to Sections: 1-15.</p> <p>Incorporation of Exposure Scenario information (Sections 4-13).</p> <p>Update of information regarding mixture components (Sektion 3).</p> <p>Changes related to new regulations.</p>
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