

# Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 01/26/2017 Supersedes:07/16/2015 Version: 1.2

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

### 1.1. Product identifier

Product form : Mixture

Trade name : JOHNSEN'S 50% STARTING FLUID 10.7 OZ.

Product code : 6752

Other means of identification : This diesel fuel additive complies with federal low sulfur content requirements for us in diesel

motor vehicles and nonroad engines.

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

Use of the substance/mixture : Starting Fluid

#### 1.3. Details of the supplier of the safety data sheet

Technical Chemical Company P.O. BOX 139 Cleburne, Texas 76033 T 817-645-6088

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC 24 Hour 1-800-424-9300, 1-703-527-3887 (International)

#### **SECTION 2: Hazards identification**

#### 2.1. Classification of the substance or mixture

#### **GHS-US** classification

Flam. Aerosol 1 H222 Compressed gas H280 Skin Irrit. 2 H315 Carc. 2 H351 Repr. 2 H361 STOT SE 3 H336

Full text of H statements: see section 16

### 2.2. Label elements

## **GHS-US** labeling

Hazard pictograms (GHS-US)



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GHS02

GHS04

GHS07

GHS0

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H222 - Extremely flammable aerosol

H280 - Contains gas under pressure; may explode if heated

H315 - Causes skin irritation

H336 - May cause drowsiness or dizziness

H351 - Suspected of causing cancer

H361 - Suspected of damaging fertility or the unborn child

Precautionary statements (GHS-US) : P201 - Obtain special instructions

P202 - Do not handle until all safety precautions have been read and understood P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking

P211 - Do not spray on an open flame or other ignition source P251 - Pressurized container: Do not pierce or burn, even after use

P261 - Avoid breathing dust,fume,gas,mist,vapor spray P264 - Wash affected areas thoroughly after handling P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves, protective clothing, eye protection, face protection

P302+P352 - If on skin: Wash with plenty of soap and water

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P308+P313 - If exposed or concerned: Get medical advice/attention P312 - Call a POISON CONTROL CENTER, doctor, if you feel unwell.

P321 - Specific treatment: See section 4.1 on SDS

P332+P313 - If skin irritation occurs: Get medical advice/attention P362+P364 - Take off contaminated clothing and wash it before reuse P403+P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

P410+P403 - Protect from sunlight. Store in a well-ventilated place

P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

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P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local, regional, national, international regulations.

#### 2.3. Other hazards

Other hazards not contributing to the classification

: Contains gas under pressure; may explode if heated. None under normal conditions.

### **Unknown acute toxicity (GHS US)**

No data available

## **SECTION 3: Composition/Information on ingredients**

#### **Substance**

Not applicable

#### 3.2. **Mixture**

Name	Product identifier	%	GHS-US classification
Diethyl Ether	(CAS No) 60-29-7	45 - 50	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H336
Petroleum Gases, Liquefied, Sweetened	(CAS No) 68476-86-8	10 - 30	Flam. Gas 1, H220 Compressed gas, H280
Heptane, Branched Cyclic	(CAS No) 426260-76-6	15.264 - 15.9	Flam. Liq. 1, H224 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
n-Heptane	(CAS No) 142-82-5	3.975 - 7.155	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Carbon Dioxide, Liquefied, Under Pressure	(CAS No) 124-38-9	5 - 10	Compressed gas, H280
Ethanol	(CAS No) 64-17-5	< 3	Flam. Liq. 2, H225
Chloroethane	(CAS No) 75-00-3	<= 1	Flam. Gas 1, H220 Carc. 2, H351 Aquatic Chronic 3, H412
Toluene	(CAS No) 108-88-3	0.159 - 0.886	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
Distillates (Petroleum), Hydrotreated Heavy Naphthenic	(CAS No) 64742-52-5	< 1	Asp. Tox. 1, H304
2,6-Di-tert-butyl-p-cresol	(CAS No) 128-37-0	0 - 0.05	Acute Tox. 4 (Oral), H302

The exact percentage is a trade secret.

# **SECTION 4: First aid measures**

#### **Description of first aid measures**

First-aid measures general

: Never give anything by mouth to an unconscious person. IF exposed or concerned: Get

medical advice/attention. Suspected of causing cancer.

: Cough. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call First-aid measures after inhalation

a POISON CENTER or doctor/physician if you feel unwell.

Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash First-aid measures after skin contact

with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Direct contact with the eyes is likely to be irritating. Rinse immediately with plenty of water.

First-aid measures after eye contact Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

# Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Suspected of damaging fertility or the unborn child. Causes damage to organs.

Symptoms/injuries after inhalation : Shortness of breath. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Itching. Red skin. Skin rash/inflammation. Causes skin irritation.

Symptoms/injuries after eye contact May cause slight eye irritation . May cause severe irritation. Irritation of the eye tissue.

Inflammation/damage of the eye tissue. Redness of the eye tissue.

Symptoms/injuries after ingestion : May be harmful if swallowed and enters airways. May be fatal if swallowed and enters airways.

# Indication of any immediate medical attention and special treatment needed

No additional information available

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#### **SECTION 5: Firefighting measures**

# **Extinguishing media**

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

#### Special hazards arising from the substance or mixture

: Extremely flammable aerosol. Fire hazard

Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of **Explosion hazard** 

burns and injuries.

### Advice for firefighters

Firefighting instructions Use water spray or fog for cooling exposed containers. Exercise caution when fighting any

chemical fire. Prevent fire-fighting water from entering environment. DO NOT fight fire when fire

reaches explosives. Evacuate area.

Protection during firefighting Do not enter fire area without proper protective equipment, including respiratory protection.

Other information Aerosol level 3.

#### **SECTION 6: Accidental release measures**

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

General measures No open flames. No smoking. Isolate from fire, if possible, without unnecessary risk. Remove

ignition sources. Use special care to avoid static electric charges.

#### 6.1.1. For non-emergency personnel

Protective equipment : Gloves. Safety glasses.

**Emergency procedures** : Evacuate unnecessary personnel.

#### 6.1.2 For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing dust,fume,gas,mist,vapor spray.

**Emergency procedures** : Ventilate area.

#### **Environmental precautions**

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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

: Dam up the liquid spill. Contain released substance, pump into suitable containers. Plug the For containment

leak, cut off the supply.

: Store away from other materials. Methods for cleaning up

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### **SECTION 7: Handling and storage**

## Precautions for safe handling

: Hazardous waste due to potential risk of explosion. Pressurized container: Do not pierce or Additional hazards when processed

burn, even after use

Wash hands and other exposed areas with mild soap and water before eating, drinking or Precautions for safe handling smoking and when leaving work. Provide good ventilation in process area to prevent formation

of vapor. Do not spray on an open flame or other ignition source. Obtain special instructions Do not handle until all safety precautions have been read and understood. Avoid breathing

dust,fume,gas,mist,vapor spray. Use only outdoors or in a well-ventilated area.

Hygiene measures Wash affected areas thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Remove contaminated clothes. Always wash hands after handling the product. Separate working clothes from town clothes. Launder

> separately. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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

Technical measures : Proper grounding procedures to avoid static electricity should be followed.

Storage conditions Keep only in the original container in a cool, well ventilated place away from : Do not expose to

temperatures exceeding 50 °C/ 122 °F. Keep in fireproof place. Keep container tightly closed.

Incompatible products Strong bases. Strong acids.

Incompatible materials Sources of ignition. Direct sunlight. Heat sources.

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Storage area : Store in a well-ventilated place.

#### Specific end use(s)

Follow Label Directions.

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USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA OSHA  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	NA (mg/m³)	1200  400 ppm (Ethyl ether; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)  1500 mg/m³  500 ppm  1200 mg/m³  400 ppm
Diethyl Ether (60-29-7)  USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA OSHA  OSHA PE  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	NA (ppm)  TEL (mg/m³)  TEL (ppm)  EL (TWA) (mg/m³)  EL (TWA) (ppm)	400 ppm (Ethyl ether; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) 1500 mg/m³ 500 ppm 1200 mg/m³
USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	NA (ppm)  TEL (mg/m³)  TEL (ppm)  EL (TWA) (mg/m³)  EL (TWA) (ppm)	400 ppm (Ethyl ether; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) 1500 mg/m³ 500 ppm 1200 mg/m³
USA ACGIH  USA ACGIH  USA ACGIH  USA ACGIH  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	NA (ppm)  TEL (mg/m³)  TEL (ppm)  EL (TWA) (mg/m³)  EL (TWA) (ppm)	400 ppm (Ethyl ether; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) 1500 mg/m³ 500 ppm 1200 mg/m³
USA ACGIH  USA ACGIH ST  USA OSHA  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH ST  ACGIH ST  ACGIH ST  ACGIH ST	TEL (mg/m³)  TEL (ppm)  EL (TWA) (mg/m³)  EL (TWA) (ppm)	exposure limit 8 h; TLV - Adopted Value)  1500 mg/m³  500 ppm  1200 mg/m³
USA ACGIH  USA OSHA  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	TEL (ppm)  L (TWA) (mg/m³)  L (TWA) (ppm)	500 ppm 1200 mg/m <sup>3</sup>
USA OSHA  USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	EL (TWA) (mg/m³) EL (TWA) (ppm)	1200 mg/m³
USA OSHA  OSHA PE  Toluene (108-88-3)  USA ACGIH  ACGIH TV	EL (TWA) (ppm)	
Toluene (108-88-3) USA ACGIH ACGIH TV	, , , ,	400 ppm
USA ACGIH TV	VA (mg/m³)	
USA ACGIH TV	VA (mg/m³)	
		75 mg/m³
USA ACGIH ACGIH TV	WA (ppm)	20 ppm
USA OSHA OSHA PE	L (TWA) (ppm)	200 ppm
USA OSHA OSHA PE	L (Ceiling) (ppm)	300 ppm
n-Heptane (142-82-5)		
USA ACGIH ACGIH TV	VA (ppm)	400 ppm (Heptane, all isomers; USA; Time-weighted
104 40011		average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH ST	TEL (ppm)	500 ppm (Heptane, all isomers; USA; Short time value; TLV - Adopted Value)
Heptane, Branched Cyclic (426260-76-6	)	,
USA ACGIH ACGIH TV	VA (ppm)	400 ppm
USA ACGIH ACGIH ST	TEL (ppm)	500 ppm
USA OSHA OSHA PE	L (TWA) (ppm)	500 ppm
Distillates (Petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)		
	VA (mg/m³)	5 mg/m³ MIST 8 HOURS
USA OSHA OSHA PE	L (TWA) (mg/m³)	5 mg/m³ MIST 8 HOURS
Petroleum Gases, Liquefied, Sweetened	d (68476-86-8)	
USA ACGIH TV	· ,	1000 ppm Listed under Aliphatic hydrocarbon gases alkane C1-C4
USA OSHA OSHA PE	L (TWA) (mg/m³)	1800 mg/m³
USA OSHA OSHA PE	L (TWA) (ppm)	1000 ppm
Carbon Dioxide, Liquefied, Under Press	sure (124-38-9)	
USA ACGIH ACGIH TV	VA (mg/m³)	9000 mg/m³
USA ACGIH TV	VA (ppm)	5000 ppm (Carbon dioxide; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH ACGIH ST	TEL (mg/m³)	54000
USA ACGIH ACGIH ST	ΓEL (ppm)	30000 ppm
USA OSHA OSHA PE	L (TWA) (mg/m³)	9000 mg/m³
USA OSHA OSHA PE	L (TWA) (ppm)	5000 ppm
Ethanol (64-17-5)		
USA ACGIH ACGIH ST	ΓEL (ppm)	1000 ppm (Ethanol; USA; Short time value; TLV - Adopted Value)
2,6-Di-tert-butyl-p-cresol (128-37-0)		
USA ACGIH TV  8.2. Exposure controls	VA (mg/m³)	2 mg/m³ (Butylated hydroxytoluene (BHT); USA; Time- weighted average exposure limit 8 h; TLV - Adopted

8.2. Exposure controls
Appropriate engineering controls

: Local exhaust venilation, vent hoods . Ensure good ventilation of the work station.

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Personal protective equipment : Gloves. Safety glasses. Avoid all unnecessary exposure.





Materials for protective clothing : GIVE EXCELLENT RESISTANCE:

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is

recommended.

Environmental exposure controls : Avoid release to the environment.

Consumer exposure controls : Avoid contact during pregnancy/while nursing.

Other information : Do not eat, drink or smoke during use.

# **SECTION 9: Physical and chemical properties**

# 9.1. Information on basic physical and chemical properties

Physical state : Gas
Appearance : Liquid.

Color : Colourless to light yellow.

Odor : Ether-like odour.
Odor threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : No data available

Boiling point : -31.1 °C (Lowest Component)

Flash point : -96.23 °C (Lowest Component)

Auto-ignition temperature : 180 °C

Decomposition temperature : No data available Flammability (solid, gas) : No data available Vapor pressure : No data available Relative vapor density at 20 °C : No data available No data available Relative density Solubility Poorly soluble in water. Log Pow : No data available Log Kow : No data available : No data available Viscosity, kinematic Viscosity, dynamic : No data available

Explosive properties : Heating may cause a fire or explosion.

Oxidizing properties : No data available Explosion limits : No data available

9.2. Other information

VOC content : 93.3 %

Gas group : Compressed gas

# SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

## 10.2. Chemical stability

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

# 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

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### 10.5. Incompatible materials

Strong acids. Strong bases.

# 10.6. Hazardous decomposition products

Toxic fume. . Carbon monoxide. Carbon dioxide.

# **SECTION 11: Toxicological information**

# 11.1. Information on toxicological effects

Acute toxicity : Not classified

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Diethyl Ether (60-29-7)	
LD50 oral rat	1215 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1600 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 14200 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	99 mg/l/4h (Rat)
LC50 inhalation rat (ppm)	32000 ppm/4h (Rat)
Toluene (108-88-3)	
LD50 oral rat	5580 mg/kg body weight (Rat; Equivalent or similar to OECD 401; Literature study; 5580 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 5000 mg/kg body weight LD50 quoted as 14.1 mL/kg (12267 mg/kg using density of 0.87)
LC50 inhalation rat (mg/l)	> 28.1 mg/l/4h (Rat; Air, Literature study)
n-Heptane (142-82-5)	
LD50 oral rat	> 15000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; >5000 mg/kg bodyweight; Rat; Read-across)
LD50 dermal rabbit	> 3160 mg/kg (Rabbit; Literature study; Equivalent or similar to OECD 402; >2000 mg/kg bodyweight; Rabbit; Read-across)
LC50 inhalation rat (mg/l)	103 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	25000 ppm/4h (Rat; Literature study)
Heptane, Branched Cyclic (426260-76	-6)
LD50 oral rat	> 15000 mg/kg (Rat; Equivalent or similar to OECD 401; Literature study; >5000 mg/kg bodyweight; Rat; Read-across)
LD50 dermal rabbit	> 3160 mg/kg (Rabbit; Literature study; Equivalent or similar to OECD 402; >2000 mg/kg bodyweight; Rabbit; Read-across)
LC50 inhalation rat (mg/l)	103 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	25000 ppm/4h (Rat; Literature study)
Distillates (Petroleum), Hydrotreated	Heavy Naphthenic (64742-52-5)
LD50 oral rat	> 5000 mg/kg body weight
Ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
2,6-Di-tert-butyl-p-cresol (128-37-0)	
LD50 oral rat	890 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; >6000 mg/kg bodyweight; Rat)
LD50 dermal rat	> 2000 mg/kg (Rat; Literature study; OECD 402: Acute Dermal Toxicity; >2000 mg/kg bodyweight; Rat; Experimental value)
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Serm cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Toluene (108-88-3)	
IARC group	3
Distillates (Petroleum), Hydrotreated	Heavy Naphthenic (64742-52-5)
IARC group	3
Ethanol (64-17-5)	
IARC group	1
	<u> </u>
2,6-Di-tert-butyl-p-cresol (128-37-0) IARC group	3
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.

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Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.

Specific target organ toxicity (repeated

exposure)

: Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and

symptoms

Symptoms/injuries after inhalation

Symptoms/injuries after eye contact

: Based on available data, the classification criteria are not met.

: Shortness of breath. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Itching. Red skin. Skin rash/inflammation. Causes skin irritation.

May cause slight eye irritation . May cause severe irritation. Irritation of the eye tissue.

Inflammation/damage of the eye tissue. Redness of the eye tissue.

Symptoms/injuries after ingestion : May be harmful if swallowed and enters airways. May be fatal if swallowed and enters airways.

# **SECTION 12: Ecological information**

#### 12.1. **Toxicity**

	Diethyl Ether (60-29-7)			
LC50 fish 2 2560 mg/l (LC50; 96 h; Pimephales promelas)				
	EC50 Daphnia 2 1380 mg/l (EC50; 48 h)			
	n-Heptane (142-82-5)			
	EC50 Daphnia 1	0.2 mg/l (LC50; Other; 96 h; Chaetogammarus marinus; Semi-static system; Salt water; Experimental value)		

# Carbon Dioxide, Liquefied, Under Pressure (124-38-9)

LC50 fish 1 35 mg/l (LC50; 96 h; Salmo gairdneri)

Ethanol (64-17-5)			
LC50 fish 2	13000 mg/l (LC50; 96 h; Salmo gairdneri; Static system; Fresh water)		
2,6-Di-tert-butyl-p-cresol (128-37-0)			
LC50 fish 1	>= 0.57 mg/l (LC0; EU Method C.1; 96 h; Brachydanio rerio; Semi-static system; Fresh water; Experimental value)		
EC50 Daphnia 1	0.48 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)		
LC50 fish 2	0.199 mg/l (LC50; ECOSAR v1.00; 96 h; Pisces)		
EC50 Daphnia 2	0.15 mg/l (NOEC; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)		

#### 12.2. Persistence and degradability

JOHNSEN'S 50% STARTING FLUID 10.7 OZ.	
Persistence and degradability	Not established.

Diethyl Ether (60-29-7)	
Persistence and degradability	Not readily biodegradable in water. No (test)data on mobility of the substance available. Reacts with air.
Biochemical oxygen demand (BOD)	0.03 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.026 g O <sub>2</sub> /g substance (KMnO4)
ThOD	2.60 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.012

Toluene (108-88-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	2.15 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.52 g O <sub>2</sub> /g substance
ThOD	3.13 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.69

n-Heptane (142-82-5)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Biodegradable in the soil. Low potential for adsorption in soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	1.92 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.06 g O <sub>2</sub> /g substance
ThOD	3.52 g O <sub>2</sub> /g substance
BOD (% of ThOD)	> 0.5 (5 days; Literature study)
Heptane, Branched Cyclic (426260-76-6)	

	•	
Persistence and degrada	bility	May cause long-term adverse effects in the environment.

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Distillates (Petroleum), Hydrotreated Heavy	Naphthenic (64742-52-5)		
Persistence and degradability	Not established.		
Petroleum Gases, Liquefied, Sweetened (684	76-86-8)		
Persistence and degradability	Not established.		
Carbon Dioxide, Liquefied, Under Pressure (	124-38-9)		
Persistence and degradability	Biodegradability: not applicable. Not applicable (gas).		
Biochemical oxygen demand (BOD)	Not applicable		
Chemical oxygen demand (COD)	Not applicable		
ThOD	Not applicable		
Ethanol (64-17-5)			
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.		
Biochemical oxygen demand (BOD)	$0.8$ - $0.967$ g $O_2$ /g substance		
Chemical oxygen demand (COD)	1.70 g O <sub>2</sub> /g substance		
ThOD	2.10 g O <sub>2</sub> /g substance		
Chloroethane (75-00-3)			
Persistence and degradability	May cause long-term adverse effects in the environment.		
2,6-Di-tert-butyl-p-cresol (128-37-0)			
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil. Adsorbs into the soil. Low potential for mobility in soil. Photooxidation in the air.		
Biochemical oxygen demand (BOD)	0.51 g O <sub>2</sub> /g substance		
Chemical oxygen demand (COD)	2.27 g O <sub>2</sub> /g substance		
ThOD	2.977 g O <sub>2</sub> /g substance		
BOD (% of ThOD)	0.17		
12.3. Bioaccumulative potential			
JOHNSEN'S 50% STARTING FLUID 10.7 OZ.			
Bioaccumulative potential	Not established.		
Diethyl Ether (60-29-7)			
BCF fish 1	0.9 - 9.1 (BCF)		
Log Pow	0.82 - 0.89 (Experimental value)		
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).		
Toluene (108-88-3)			
BCF fish 2	90 (BCF; 72 h; Leuciscus idus; Static system; Fresh water)		
Log Pow	2.73 (Experimental value; Other; 20 °C)		
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).		
n-Heptane (142-82-5)	FFO (DOE DOEDAE a co)		
BCF other aquatic organisms 1	552 (BCF; BCFBAF v3.00)		
Log Pow  Bioaccumulative potential	4.66 (Experimental value; 4.5; Literature study)  Potential for bioaccumulation (4 ≥ Log Kow ≤ 5).		
<u>'</u>	1 otential for bloaccumulation (4 ± Log Now ± 5).		
Heptane, Branched Cyclic (426260-76-6)	Not octablished		
Bioaccumulative potential	Not established.		
Distillates (Petroleum), Hydrotreated Heavy N Bioaccumulative potential			
<u>'</u>	Not established.		
Petroleum Gases, Liquefied, Sweetened (684			
Bioaccumulative potential	Not established.		
Carbon Dioxide, Liquefied, Under Pressure ( Log Pow	124-38-9)  0.83 (Experimental value)		
Bioaccumulative potential	Bioaccumulation: not applicable.		
Ethanol (64-17-5)			
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)		
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).		
Chloroethane (75-00-3)			
Bioaccumulative potential	Not established.		
2,6-Di-tert-butyl-p-cresol (128-37-0)			
BCF fish 1	230 - 2500 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 56 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)		
	Carpio, i iow-tinough system, i resti water, Experimental value)		

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2,6-Di-tert-butyl-p-cresol (128-37-0			
Log Pow 5.1 (Experimental value)			
Bioaccumulative potential Potential for bioaccumulation (500 ≤ BCF ≤ 5000).			
12.4. Mobility in soil			
Diethyl Ether (60-29-7)			
Surface tension 0.017 N/m (20 °C)			
Toluene (108-88-3)			
Surface tension	0.03 N/m (20 °C)		
n-Heptane (142-82-5)			
Surface tension	0.019 N/m (25 °C; 0.020 N/m; 20 °C)		
Log Koc log Koc,SRC PCKOCWIN v2.0; 2.38; Calculated value			
Ethanol (64-17-5)			
Surface tension 0.0245 N/m (20 °C)			
2,6-Di-tert-butyl-p-cresol (128-37-0			
Log Koc	Koc,PCKOCWIN v1.66; 23030; Calculated value; log Koc; PCKOCWIN v1.66; 4.362; Calculated value		

May be harmful to plant growth, blooming and fruit formation.

### 12.5. Other adverse effects

Ecology - soil

Other information : Avoid release to the environment.

# **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Container under

pressure. Do not drill or burn even after use. Dispose of contents/container to appropriate waste disposal facility, in accordance with local, regional, national, international regulations.

Additional information : Flammable vapors may accumulate in the container.

Ecology - waste materials : Avoid release to the environment.

# **SECTION 14: Transport information**

In accordance with ADR / RID / IMDG / IATA / ADN

US DOT (ground): UN1950, Aerosols, 2.1, Limited Quantity ICAO/IATA (air): UN1950, Aerosols, 2.1, Limited Quantity

IMO/IMDG (water): UN1950, Aerosols, 2.1 (Marine Pollutant-Heptane), Limited Quantity

Special Provisions: N82 - See 173.306 of this subchapter for classification criteria for flammable aerosols

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Aerosols

Flammable, n.o.s. (engine starting fluid) (each not exceeding 1 L capacity)

Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas



DOT Special Provisions (49 CFR 172.102) : N82 - See 173.306 of this subchapter for classification criteria for flammable aerosols

DOT Packaging Exceptions (49 CFR 173.xxx) : 306
DOT Packaging Non Bulk (49 CFR 173.xxx) : 304
DOT Packaging Bulk (49 CFR 173.xxx) : None

# 14.3. Additional information

Other information : No supplementary information available.

#### **Overland transport**

No additional information available

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel

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DOT Vessel Stowage Other : 48 - Stow "away from" sources of heat,87 - Stow "separated from" Class 1 (explosives) except

Division 14,126 - Segregation same as for Class 9, miscellaneous hazardous materials

Subsidiary risks (IMDG) : Marine Pollutant-Heptane

Air transport

DOT Quantity Limitations Passenger aircraft/rail : Forbidden

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 150 kg

CFR 175.75)

### **SECTION 15: Regulatory information**

# 15.1. US Federal regulations

JOHNSEN'S 50% STARTING FLUID 10.7 OZ.	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard
	Sudden release of pressure nazard

### Diethyl Ether (60-29-7)

SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
	Fire hazard

# Toluene (108-88-3)

Subject to reporting requirements of United States SARA Section 313
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302

SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard
	Fire hazard
	Immediate (acute) health hazard

#### Heptane, Branched Cyclic (426260-76-6)

Listed on the United States	TSCA (Toxic Substar	nces Control Act) inventory

SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard
	Delayed (chronic) health hazard

# Distillates (Petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)

SARA Section 311/312 Hazard Classes Delayed (chronic) health hazard

#### Petroleum Gases, Liquefied, Sweetened (68476-86-8)

1 circleam Gases, Elquenea, Gweetenea (604)	0 00 0)
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
	Fire hazard
	Sudden release of pressure hazard

# Carbon Dioxide, Liquefied, Under Pressure (124-38-9)

SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard
	Immediate (acute) health hazard

# 15.2. International regulations

# CANADA

JOHNSEN'S 50% STARTING FLUID 10.7 OZ	7.			
WHMIS Classification	Class B Division 5 - Flammable Aerosol			
Toluene (108-88-3)				
Listed on the Canadian DSL (Domestic Substances List)				
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects			
Heptane, Branched Cyclic (426260-76-6)				
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects			

# **EU-Regulations**

Toluene	(108-88-3)
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Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

# Heptane, Branched Cyclic (426260-76-6)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

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# Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.1; R45 Muta.Cat.2; R46 F+; R12 Xn; R22 Xi; R38 R19

Full text of R-phrases: see section 16

### 15.2.2. National regulations

# Heptane, Branched Cyclic (426260-76-6)

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA under 40 CFR 720.30.

# 15.3. US State regulations

JOHNSEN'S 50% STARTI	NG FLUID 10.7 OZ.				
U.S California - Proposition	on 65 - Carcinogens List	No			
U.S California - Proposition	on 65 - Developmental	No			
U.S California - Proposition Toxicity - Female	·	No			
U.S California - Proposition Toxicity - Male	on 65 - Reproductive	No			
State or local regulations		U.S California - Proposition (	65		
Diethyl Ether (60-29-7)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	Yes	No	No		
Toluene (108-88-3)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	Yes	No	No		
n-Heptane (142-82-5)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No	No		
Heptane, Branched Cyclic	c (426260-76-6)				
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No	No		
Distillates (Petroleum), H	ydrotreated Heavy Naphthe	nic <b>(64742-52-5)</b>			
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No	No		
Petroleum Gases, Liquefi	ed, Sweetened (68476-86-8				
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No	No		
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U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 -	U.S California -	Non-significant risk level	
Dovolopinonial Toxicity	Reproductive Toxicity - Female	Proposition 65 - Reproductive Toxicity - Male	(NSRL)	
No	No	No		
U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No		
U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No		
2,6-Di-tert-butyl-p-cresol (128-37-0)				
U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)	
No	No	No		
	J.S California - Proposition 65 - Developmental Toxicity  No  J.S California - Proposition 65 - Developmental Toxicity  No  3-37-0) J.S California - Proposition 65 - Developmental Toxicity	J.S California - Proposition 65 - Developmental Toxicity  No  No  No  No  U.S California - Proposition 65 - Reproductive Toxicity - Female  No  No  U.S California - Proposition 65 - Developmental Toxicity  No  No  No  No  No  No  No  No  No  N	J.S California - Proposition 65 - Developmental Toxicity  No  No  No  No  No  No  No  No  No  N	

#### Dietnyi Etner (60-29-7)

#### State or local regulations

U.S. - California - Proposition 65

# Toluene (108-88-3)

# State or local regulations

U.S. - California - Proposition 65

U.S. - New Jersey - Special Health Hazards Substances List

New Jersey Right-to-Know

U.S. - Massachusetts - Right To Know List

Rhode Island Right to Know

U.S. - Michigan - Critical Materials List

U.S. - New Jersey - Environmental Hazardous Substances List

U.S. - Illinois - Toxic Air Contaminants

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

# Petroleum Gases, Liquefied, Sweetened (68476-86-8)

# State or local regulations

New Jersey Right-to-Know Minnesota Right-to-Know Rhode Island Right to Know

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - Massachusetts - Right To Know List

### **SECTION 16: Other information**

Other information : None.

# Full text of H-phrases:

ext of Frymases.	
H220	Extremely flammable gas
H222	Extremely flammable aerosol
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child

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H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard : 2 - Intense or continued exposure could cause temporary

incapacitation or possible residual injury unless prompt

medical attention is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn

readily.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.



## **HMIS III Rating**

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 4 Severe Hazard Physical : 1 Slight Hazard

Personal Protection : B

SDS US (GHS HazCom 2012) - TCC

The Supplier identified in Section 1 of this SDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, the manufacturer/distributor of this product does not guarantee their accuracy or completeness NOR SHALL ANY OF THEIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. The manufacturer/distributor assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

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