



# JOHNSEN'S 50% STARTING FLUID 10.7 OZ.

## Safety Data Sheet

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

Revision date: 08/27/2014

Version:

### 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

#### 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

##### Classification (GHS-US)

Flam. Aerosol 1 H222  
Compressed gas H280  
Skin Irrit. 2 H315  
Muta. 1B H340  
Carc. 1A H350  
Repr. 2 H361  
STOT SE 3 H336  
STOT RE 2 H373

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



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  
H340 - May cause genetic defects  
H350 - May cause cancer  
H361 - Suspected of damaging fertility or the unborn child  
H373 - May cause damage to organs through prolonged or repeated exposure

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  
P260 - Do not breathe dust, fumes, gas, mist, vapor spray  
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.  
P314 - Get medical advice/attention if you feel unwell  
P321 - Specific treatment: See section 4.1 on SDS  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P362 - Take off contaminated clothing and wash before reuse  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

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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  
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.

### 2.4. Unknown acute toxicity (GHS-US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

| Name   | Product identifier   | %             | Classification (GHS-US)   |
|--|----------------------|---------------|---|
| Diethyl Ether  | (CAS No) 60-29-7     | 50 - 70       | Flam. Liq. 1, H224<br>Acute Tox. 4 (Oral), H302   |
| Petroleum Gases, Liquefied, Sweetened                  | (CAS No) 68476-86-8  | 10 - 30       | Flam. Gas 1, H220<br>Flam. Liq. 1, H224<br>Muta. 1B, H340<br>Carc. 1A, H350   |
| Heptane, Branched Cyclic                               | (CAS No) 426260-76-6 | 15.264 - 15.9 | Flam. Liq. 1, H224<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Chronic 3, H412                          |
| Heptane  | (CAS No) 142-82-5    | 3.975 - 7.155 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>STOT SE 3, H336<br>Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| Carbon Dioxide, Liquefied, Under Pressure              | (CAS No) 124-38-9    | 5 - 10        | Compressed gas, H280  |
| Distillates (Petroleum), Hydrotreated Heavy Naphthenic | (CAS No) 64742-52-5  | < 1           | Not classified  |
| Toluene  | (CAS No) 108-88-3    | 0.159 - 0.636 | Flam. Liq. 2, H225<br>Skin Irrit. 2, H315<br>Repr. 2, H361<br>STOT SE 3, H336<br>STOT RE 2, H373<br>Asp. Tox. 1, H304                 |

## SECTION 4: First aid measures

### 4.1. 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.

First-aid measures after inhalation : Cough. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Direct contact with the eyes is likely to be irritating. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

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

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

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

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

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

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.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

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

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

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

Fire hazard : Extremely flammable aerosol.  
Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

### 5.3. 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

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

General measures : No naked lights. 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.

### 6.2. Environmental precautions

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

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

For containment : Dam up the liquid spill. Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.  
Methods for cleaning up : Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Hazardous waste due to potential risk of explosion. Pressurized container: Do not pierce or burn, even after use.  
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or 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. Eliminate all ignition sources if safe to do so. 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. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. 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.

### 7.3. Specific end use(s)

Follow Label Directions.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Diethyl Ether (60-29-7) |                                |      |
|-------------------------|--------------------------------|------|
| USA ACGIH               | ACGIH TWA (mg/m <sup>3</sup> ) | 1200 |

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| <b>Diethyl Ether (60-29-7)</b> |                                     |                        |
|--------------------------------|-------------------------------------|------------------------|
| USA ACGIH                      | ACGIH TWA (ppm)                     | 400 ppm                |
| USA ACGIH                      | ACGIH STEL (mg/m <sup>3</sup> )     | 1500 mg/m <sup>3</sup> |
| USA ACGIH                      | ACGIH STEL (ppm)                    | 500 ppm                |
| USA OSHA                       | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 1200 mg/m <sup>3</sup> |
| USA OSHA                       | OSHA PEL (TWA) (ppm)                | 400 ppm                |

| <b>Toluene (108-88-3)</b> |                                |                      |
|---------------------------|--------------------------------|----------------------|
| USA ACGIH                 | ACGIH TWA (mg/m <sup>3</sup> ) | 75 mg/m <sup>3</sup> |
| USA ACGIH                 | ACGIH TWA (ppm)                | 20 ppm               |
| USA OSHA                  | OSHA PEL (TWA) (ppm)           | 200 ppm              |
| USA OSHA                  | OSHA PEL (Ceiling) (ppm)       | 300 ppm              |

| <b>Heptane (142-82-5)</b> |                  |         |
|---------------------------|------------------|---------|
| USA ACGIH                 | ACGIH TWA (ppm)  | 400 ppm |
| USA ACGIH                 | ACGIH STEL (ppm) | 400 ppm |

| <b>Heptane, Branched Cyclic (426260-76-6)</b> |                      |         |
|---|----------------------|---------|
| USA ACGIH                                     | ACGIH TWA (ppm)      | 400 ppm |
| USA ACGIH                                     | ACGIH STEL (ppm)     | 500 ppm |
| USA OSHA                                      | OSHA PEL (TWA) (ppm) | 500 ppm |

| <b>Distillates (Petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)</b> |                                     |                                  |
|--|-------------------------------------|----------------------------------|
| USA ACGIH  | ACGIH TWA (mg/m <sup>3</sup> )      | 5 mg/m <sup>3</sup> MIST 8 HOURS |
| USA OSHA   | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 5 mg/m <sup>3</sup> MIST 8 HOURS |

| <b>Petroleum Gases, Liquefied, Sweetened (68476-86-8)</b> |                                     |  |
|---|-------------------------------------|--|
| USA ACGIH   | ACGIH TWA (ppm)                     | 1000 ppm Listed under Aliphatic hydrocarbon gases alkane C1-C4 |
| USA OSHA  | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 1800 mg/m <sup>3</sup>   |
| USA OSHA  | OSHA PEL (TWA) (ppm)                | 1000 ppm   |

| <b>Carbon Dioxide, Liquefied, Under Pressure (124-38-9)</b> |                                     |                        |
|---|-------------------------------------|------------------------|
| USA ACGIH   | ACGIH TWA (mg/m <sup>3</sup> )      | 9000 mg/m <sup>3</sup> |
| USA ACGIH   | ACGIH TWA (ppm)                     | 5000 ppm               |
| USA ACGIH   | ACGIH STEL (mg/m <sup>3</sup> )     | 54000                  |
| USA ACGIH   | ACGIH STEL (ppm)                    | 30000 ppm              |
| USA OSHA  | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 9000 mg/m <sup>3</sup> |
| USA OSHA  | OSHA PEL (TWA) (ppm)                | 5000 ppm               |

### 8.2. Exposure controls

Appropriate engineering controls

: Local exhaust ventilation, vent hoods.

Personal protective equipment

: Gloves. Safety glasses. Avoid all unnecessary exposure.



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.

Other information

: Do not eat, drink or smoke during use.

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### 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                      |
| Relative density                            | : No data available                      |
| Solubility                                  | : Poorly soluble in water.               |
| Log Pow                                     | : No data available                      |
| Log Kow                                     | : No data available                      |
| Viscosity, kinematic                        | : No data available                      |
| Viscosity, dynamic                          | : No data available                      |
| Explosive properties                        | : Heating may cause a fire or explosion. |
| Oxidizing properties                        | : No data available                      |
| Explosive limits                            | : No data available                      |

#### 9.2. Other information

VOC content : 93.3 %

### 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.

#### 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

| 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)  |

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| <b>Toluene (108-88-3)</b>  |   |
|----------------------------|---|
| 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)   |

| <b>Heptane (142-82-5)</b>  |   |
|----------------------------|---|
| 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)  |

| <b>Heptane, Branched Cyclic (426260-76-6)</b> |   |
|---|---|
| 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)  |

| <b>Distillates (Petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)</b> |                          |
|--|--------------------------|
| LD50 oral rat  | > 5000 mg/kg body weight |
| LD50 dermal rabbit   | > 2000 mg/kg body weight |
| LC50 inhalation rat (mg/l)   | > 5.2 mg/l/4h            |

|                                   |                              |
|-----------------------------------|------------------------------|
| Skin corrosion/irritation         | : Causes skin irritation.    |
| Serious eye damage/irritation     | : Not classified             |
| Respiratory or skin sensitization | : Not classified             |
| Germ cell mutagenicity            | : May cause genetic defects. |
| Carcinogenicity                   | : May cause cancer.          |

| <b>Toluene (108-88-3)</b> |   |
|---------------------------|---|
| IARC group                | 3 |

| <b>Distillates (Petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)</b> |   |
|--|---|
| IARC group   | 3 |

|   |  |
|---|--|
| Reproductive toxicity                               | : Suspected of damaging fertility or the unborn child.   |
| Specific target organ toxicity (single exposure)    | : May cause drowsiness or dizziness.   |
| Specific target organ toxicity (repeated exposure)  | : May cause damage to organs through prolonged or repeated exposure.   |
| Aspiration hazard                                   | : Not classified   |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.  |
| Symptoms/injuries after inhalation                  | : Shortness of breath. May cause cancer by inhalation. May cause drowsiness or dizziness.  |
| Symptoms/injuries after skin contact                | : Causes skin irritation. Itching. Red skin. Skin rash/inflammation.   |
| 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.  |

## SECTION 12: Ecological information

### 12.1. Toxicity

| <b>Diethyl Ether (60-29-7)</b> |   |
|--------------------------------|---|
| LC50 fish 1                    | > 10000 ppm (96 h; Lepomis macrochirus) |
| EC50 Daphnia 1                 | 165 mg/l (24 h; Daphnia magna)          |
| LC50 fish 2                    | 2560 mg/l (96 h; Pimephales promelas)   |
| EC50 Daphnia 2                 | 1380 mg/l (48 h; Daphnia magna)         |
| TLM fish 1                     | > 1000 mg/l (96 h; Pisces)              |
| TLM other aquatic organisms 1  | > 1000 mg/l (96 h)                      |

| <b>Toluene (108-88-3)</b> |   |
|---------------------------|---|
| LC50 fish 1               | 24 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss) |
| EC50 Daphnia 1            | 84 mg/l (24 h; Daphnia magna; Locomotor effect)     |

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| <b>Toluene (108-88-3)</b> |  |
|---------------------------|--|
| LC50 fish 2               | 13 mg/l (96 h; Lepomis macrochirus)                        |
| EC50 Daphnia 2            | 11.5 - 19.6 mg/l (48 h; Daphnia magna)                     |
| Threshold limit algae 1   | > 400 mg/l (168 h; Scenedesmus quadricauda; Toxicity test) |
| Threshold limit algae 2   | 105 mg/l (192 h; Microcystis aeruginosa)                   |

| <b>Heptane (142-82-5)</b>                 |   |
|---|---|
| LC50 fish 1                               | 375 mg/l (96 h; Tilapia mosambica; Nominal concentration) |
| LC50 other aquatic organisms 1            | > 1000 mg/l (96 h)  |
| EC50 Daphnia 1                            | 1.5 mg/l (48 h; Daphnia magna)                            |
| LC50 fish 2                               | > 100 mg/l (96 h; Oncorhynchus kisutch)                   |
| TLM fish 1                                | 4924 mg/l (48 h; Gambusia affinis)                        |
| Threshold limit other aquatic organisms 1 | > 1000 mg/l (96 h)  |
| Threshold limit algae 1                   | > 200 mg/l (Scenedesmus quadricauda; Toxicity test)       |
| Threshold limit algae 2                   | 1.5 mg/l (8 h; Algae; Photosynthesis)                     |

| <b>Carbon Dioxide, Liquefied, Under Pressure (124-38-9)</b> |   |
|---|---|
| LC50 fish 1   | 35 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Lethal)       |
| LC50 fish 2   | 60 - 240 mg/l (12 h; Salmo gairdneri (Oncorhynchus mykiss); Lethal) |

### 12.2. Persistence and degradability

| <b>JOHNSEN'S 50% STARTING FLUID 10.7 OZ.</b> |                  |
|--|------------------|
| Persistence and degradability                | Not established. |

| <b>Diethyl Ether (60-29-7)</b>  |  |
|---------------------------------|--|
| 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 (KMnO <sub>4</sub> )   |
| ThOD                            | 2.60 g O <sub>2</sub> /g substance   |
| BOD (% of ThOD)                 | 0.012 % ThOD   |

| <b>Toluene (108-88-3)</b>       |  |
|---------------------------------|--|
| 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 % ThOD  |

| <b>Heptane (142-82-5)</b>       |   |
|---------------------------------|---|
| Persistence and degradability   | Readily biodegradable in water. Biodegradable in the soil. Adsorbs into the soil. |
| 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)                 | > % ThOD (5 day(s)) > 0.5   |

| <b>Heptane, Branched Cyclic (426260-76-6)</b> |   |
|---|---|
| Persistence and degradability                 | May cause long-term adverse effects in the environment. |

| <b>Petroleum Gases, Liquefied, Sweetened (68476-86-8)</b> |                  |
|---|------------------|
| Persistence and degradability                             | Not established. |

| <b>Carbon Dioxide, Liquefied, Under Pressure (124-38-9)</b> |   |
|---|---|
| Persistence and degradability                               | Biodegradability: not applicable. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD)                             | Not applicable  |
| Chemical oxygen demand (COD)                                | Not applicable  |
| ThOD  | Not applicable  |
| BOD (% of ThOD)   | Not applicable  |

### 12.3. Bioaccumulative potential

| <b>JOHNSEN'S 50% STARTING FLUID 10.7 OZ.</b> |                  |
|--|------------------|
| Bioaccumulative potential                    | Not established. |

| <b>Diethyl Ether (60-29-7)</b> |   |
|--------------------------------|---|
| BCF fish 1                     | 0.9 - 9.1 (Cyprinus carpio; Test duration: 6 weeks) |
| Log Pow                        | 0.82 - 0.89 (Experimental value)                    |



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| <b>Diethyl Ether (60-29-7)</b> |  |
|--------------------------------|--|
| Bioaccumulative potential      | Low potential for bioaccumulation (BCF < 500). |

| <b>Toluene (108-88-3)</b>     |  |
|-------------------------------|--|
| BCF fish 1                    | 13.2 (Anguilla japonica)                       |
| BCF fish 2                    | 90 (72 h; Leuciscus idus)                      |
| BCF other aquatic organisms 1 | 380 (24 h; Chlorella sp.; Fresh weight)        |
| BCF other aquatic organisms 2 | 4.2 (Mytilus edulis; Fresh weight)             |
| Log Pow                       | 2.73 (Experimental value; Other; 20 °C)        |
| Bioaccumulative potential     | Low potential for bioaccumulation (BCF < 500). |

| <b>Heptane (142-82-5)</b>     |   |
|-------------------------------|---|
| BCF other aquatic organisms 1 | 552   |
| Log Pow                       | 4.66 (Experimental value; 4.5; Literature)                        |
| Bioaccumulative potential     | Potential for bioaccumulation ( $4 \geq \text{Log Kow} \leq 5$ ). |

| <b>Heptane, Branched Cyclic (426260-76-6)</b> |                  |
|---|------------------|
| Bioaccumulative potential                     | Not established. |

| <b>Petroleum Gases, Liquefied, Sweetened (68476-86-8)</b> |                  |
|---|------------------|
| Bioaccumulative potential                                 | Not established. |

| <b>Carbon Dioxide, Liquefied, Under Pressure (124-38-9)</b> |  |
|---|--|
| Log Pow   | 0.83 (Experimental value)                        |
| Bioaccumulative potential                                   | Low potential for bioaccumulation (Log Kow < 4). |

### 12.4. Mobility in soil

| <b>Diethyl Ether (60-29-7)</b> |                   |
|--------------------------------|-------------------|
| Surface tension                | 0.017 N/m (20 °C) |

| <b>Toluene (108-88-3)</b> |                  |
|---------------------------|------------------|
| Surface tension           | 0.03 N/m (20 °C) |

| <b>Heptane (142-82-5)</b> |                   |
|---------------------------|-------------------|
| Surface tension           | 0.020 N/m (20 °C) |

### 12.5. Other adverse effects

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, 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)

Department of Transportation (DOT) Hazard Classes : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115



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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.  
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

### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

## 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<br>Fire hazard<br>Immediate (acute) health hazard<br>Sudden release of pressure hazard |
|-------------------------------------|--|

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

|                                     |  |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard<br>Fire hazard |
|-------------------------------------|--|

#### Toluene (108-88-3)

Listed on United States SARA Section 313  
Listed on the United States TSCA (Toxic Substances Control Act) inventory

|                                     |   |
|-------------------------------------|---|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard<br>Fire hazard<br>Immediate (acute) health hazard |
|-------------------------------------|---|

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

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

|                                     |   |
|-------------------------------------|---|
| SARA Section 311/312 Hazard Classes | Fire hazard<br>Immediate (acute) health hazard<br>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)

|                                     |   |
|-------------------------------------|---|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard<br>Fire hazard<br>Sudden release of pressure hazard |
|-------------------------------------|---|

### 15.2. International regulations

#### CANADA

#### JOHNSEN'S 50% STARTING FLUID 10.7 OZ.

|                      |  |
|----------------------|--|
| WHMIS Classification | Class B Division 5 - Flammable Aerosol |
|----------------------|--|

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| Toluene (108-88-3)   |   |
|----------------------|---|
| WHMIS Classification | Class B Division 2 - Flammable Liquid<br>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects |

| Heptane, Branched Cyclic (426260-76-6) |  |
|--|--|
| WHMIS Classification                   | Class B Division 2 - Flammable Liquid<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

### EU-Regulations

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

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

### 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

No additional information available

#### 15.3. US State regulations

| JOHNSEN'S 50% STARTING FLUID 10.7 OZ. |   |
|---------------------------------------|---|
| State or local regulations            | U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL) |

| Toluene (108-88-3)  |  |
|---|--|
| U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL) |  |

## SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

|                     |  |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4                                 |
| Aquatic Acute 1     | Hazardous to the aquatic environment - Acute Hazard Category 1   |
| Aquatic Chronic 1   | Hazardous to the aquatic environment - Chronic Hazard Category 1 |
| Aquatic Chronic 3   | Hazardous to the aquatic environment - Chronic Hazard Category 3 |
| Asp. Tox. 1         | Aspiration hazard Category 1                                     |
| Carc. 1A            | Carcinogenicity Category 1A                                      |
| Compressed gas      | Gases under pressure Compressed gas                              |
| Flam. Aerosol 1     | Flammable aerosol Category 1                                     |
| Flam. Gas 1         | Flammable gases Category 1                                       |
| Flam. Liq. 1        | Flammable liquids Category 1                                     |
| Flam. Liq. 2        | Flammable liquids Category 2                                     |
| Muta. 1B            | Germ cell mutagenicity Category 1B                               |
| Repr. 2             | Reproductive toxicity Category 2                                 |
| Skin Irrit. 2       | Skin corrosion/irritation Category 2                             |
| STOT RE 2           | Specific target organ toxicity (repeated exposure) Category 2    |
| STOT SE 3           | Specific target organ toxicity (single exposure) Category 3      |
| 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                                |

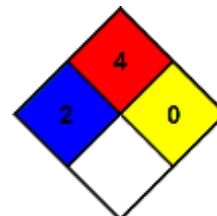
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|      |   |
|------|---|
| H340 | May cause genetic defects   |
| H350 | May cause cancer  |
| H361 | Suspected of damaging fertility or the unborn child               |
| H373 | May cause damage to organs through prolonged or repeated exposure |
| 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 MSDS 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*

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