

**SAFETY DATA SHEET****DCA-32012**

Revision Date: 28-May-2015

Revision Number: 4

**1. Product Identifier & Identity for the Chemical**

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** DCA-32012

**Other means of Identification**

**Synonyms:** None  
**Product Code:** HM008046

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Surfactant  
**Uses Advised Against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.  
15 Marriott Road  
Jandakot  
WA 6164  
Australia

ACN Number: 009 000 775  
Telephone Number: 61 (08) 9455 8300  
Fax Number: 61 (08) 9455 5300

**E-Mail address:** fdunexchem@halliburton.com

**Emergency phone number**

61 (08) 9455 8300

**Australian Poisons Information Centre**

24 Hour Service: - 13 11 26  
Police or Fire Brigade: - 000 (exchange): - 1100

**2. Hazard Identification**

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Aspiration Category	Category 1 - H304
Acute Oral Toxicity	Category 4 - H302
Skin Corrosion / irritation	Category 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Skin Sensitization	Category 1 - H317
Reproductive Toxicity	Category 1 - H360

Specific Target Organ Toxicity - (Single Exposure)	Category 2 - H371
Flammable liquids.	Category 3 - H226

### Label elements, including precautionary statements

#### Hazard Pictograms



#### Signal Word

Danger

#### Hazard Statements

H226 - Flammable liquid and vapor  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H360 - May damage fertility or the unborn child  
H371 - May cause damage to organs  
H400 - Very toxic to aquatic life  
H411 - Toxic to aquatic life with long lasting effects

#### Precautionary Statements

#### Prevention

P201 - Obtain special instructions before use  
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  
P233 - Keep container tightly closed  
P240 - Ground/Bond container and receiving equipment  
P241 - Use explosion-proof electrical/ventilating/lighting/equipment  
P243 - Take precautionary measures against static discharge  
P242 - Use only non-sparking tools  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves/eye protection/face protection  
P281 - Use personal protective equipment as required

**Response**

P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P330 - Rinse mouth  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P363 - Wash contaminated clothing before reuse  
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing  
P310 - Immediately call a POISON CENTER or doctor/physician  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308 + P313 - IF exposed or concerned: Get medical advice/attention  
P370 + P378 - In case of fire: Use water spray for extinction

**Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up

**Disposal**

P501 - Dispose of contents/container to an approved incineration plant

**Contains**

**Substances**

Terpene hydrocarbon by-products  
Methanol  
Coco diethanolamide  
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides  
Nonylphenol ethoxylate  
Linanol  
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-  
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-  
Citronellol  
Isopropanol

**CAS Number**

68956-56-9  
67-56-1  
Proprietary  
68391-01-5  
Proprietary  
Proprietary  
106-25-2  
106-24-1  
106-22-9  
67-63-0

**Other hazards which do not result in classification**

None known

**Australia Classification**

*For the full text of the H-phrases mentioned in this Section, see Section 16*

**Classification**

Xn - Harmful.  
C - Corrosive.

**Risk Phrases**

R10 Flammable.  
R22 Harmful if swallowed.  
R34 Causes burns.  
R43 May cause sensitization by skin contact.  
R61 May cause harm to the unborn child.  
R68/20/22 Harmful: possible risk of irreversible effects through inhalation and if swallowed.

### 3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
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Terpene hydrocarbon by-products	68956-56-9	10 - 30%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Asp. Tox. 1 (H304) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411) Flam. Liq. 3 (H226)
Methanol	67-56-1	5 - 10%	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Repr. 1 (H360) STOT SE 1 (H370) Flam. Liq. 2 (H225)
Coco diethanolamide	Proprietary	5 - 10%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	5 - 10%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1 (H314) Eye Corr. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Nonylphenol ethoxylate	Proprietary	5 - 10%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 3 (H402) Aquatic Chronic 2 (H411)
Linanool	Proprietary	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Aquatic Acute 3 (H402) Flam. Liq. 4 (H227)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 2 (H401)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	1 - 5%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335) Aquatic Acute 3 (H402)
Citronellol	106-22-9	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Aquatic Acute 2 (H401)
Isopropanol	67-63-0	1 - 5%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)

#### 4. First aid measures

##### Description of necessary first aid measures

##### Inhalation

If inhaled, move victim to fresh air and seek medical attention.

##### Eyes

Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

##### Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

##### Ingestion

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

##### Symptoms caused by exposure

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. Harmful if swallowed. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. Potential reproductive hazard. May cause birth defects. May cause damage to internal organs.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment****Suitable Extinguishing Media**

Carbon dioxide, dry chemical, foam.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical****Special Exposure Hazards**

May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases. Runoff to sewer may cause fire or explosion hazard.

**Special protective equipment and precautions for fire fighters****Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

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

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

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

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for Safe Handling****Handling Precautions**

Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities****Storage Information**

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring****Exposure Limits**

Substances	CAS Number	Australia NOHSC	ACGIH TLV-TWA
Terpene hydrocarbon by-products	68956-56-9	Not applicable	Not applicable
Methanol	67-56-1	TWA: 200 ppm TWA: 262 mg/m <sup>3</sup> STEL: 250 ppm STEL: 328 mg/m <sup>3</sup>	TWA: 200 ppm STEL: 250 ppm Skin
Coco diethanolamide	Proprietary	Not applicable	Not applicable
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Not applicable	Not applicable
Nonylphenol ethoxylate	Proprietary	Not applicable	Not applicable
Linanool	Proprietary	Not applicable	Not applicable
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Not applicable	Not applicable
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Not applicable	Not applicable
Citronellol	106-22-9	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 400 ppm TWA: 983 mg/m <sup>3</sup> STEL: 500 ppm STEL: 1230 mg/m <sup>3</sup>	TWA: 200 ppm STEL: 400 ppm

**Appropriate engineering controls****Engineering Controls**

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)****Respiratory Protection**

Positive pressure self-contained breathing apparatus if methanol is released.

**Hand Protection**

Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection**

Rubber apron.

**Eye Protection**

Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions**

Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls**

No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid  
**Odor:** Alcohol

**Color:** Straw  
**Odor Threshold:** No information available

PropertyValues

Remarks/ - Method

**pH:**

No data available

**Freezing Point/Range**

-29 °C

**Melting Point/Range**

No data available

**Boiling Point/Range**

No data available

**Flash Point**

30 °C / 86 °F PMCC

**Evaporation rate**

No data available

**Vapor Pressure**

No data available

**Vapor Density**

No data available

**Specific Gravity**

0.99

**Water Solubility**

Soluble in water

**Solubility in other solvents**

No data available

**Partition coefficient: n-octanol/water**

No data available

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

No data available

**Explosive Properties**

No information available

**Oxidizing Properties**

No information available

**9.2. Other information****VOC Content (%)**

No data available

**10. Stability and Reactivity****10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible Materials**

Strong oxidizers.

**10.6. Hazardous Decomposition Products**

Carbon monoxide and carbon dioxide.

**11. Toxicological Information****Information on routes of exposure****Principle Route of Exposure**

Eye or skin contact, inhalation.

**Symptoms related to exposure****Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. Harmful if swallowed. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. Potential reproductive hazard. May cause birth defects. May cause damage to internal organs.

**Numerical measures of toxicity****Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Terpene hydrocarbon by-products	68956-56-9	4400 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat)	No data available
Methanol	67-56-1	> 1187 - 2769 mg/kg (Rat) 3000 mg/kg (Monkey) 300 mg/kg (Human) <790-13,000 mg/kg (rat) 7,300-10,000 mg/kg (mouse) 14,200-14,400 mg/kg (rabbit)	15800 mg/kg (Rabbit) 393 mg/kg (Primate) 1000 mg/kg (Human) 17,100 mg/kg (rabbit) 15,800-20,000 mg/kg (rabbit)	87.5 mg/L (Rat) 6h 128.2 mg/L (Rat) 4h 83.2 mg/L (Rat) 4h 64000 mg/L (Rat) 4h 10 mg/L (Human) 4h
Coco diethanolamide	Proprietary	No data available	No data available	No data available
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	340.5 mg/kg (Rat)	1420 mg/kg (Rat)	No data available
Nonylphenol ethoxylate	Proprietary	1310 mg/kg (Rat)	> 2000 mg/kg (Rabbit) (similar substance)	No data available
Linanol	Proprietary	2790 mg/kg ( Rat )	5610 mg/kg ( Rat )	> 3.2 mg/L (Mouse, 90M, Vapor)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	4500 mg/kg ( Rat )	> 5000 mg/kg (Rabbit)	No data available
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	3600 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	No data available
Citronellol	106-22-9	3450 mg/kg (Rat)	2650 mg/kg (Rabbit)	No data available
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12,800 mg/kg (Rat) 12,870 mg/kg (Rabbit) 6280 mg/kg (Rabbit)	72.6 mg/L (Rat) 4h > 10,000 mg/L (Rat) 6h

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

**Eye Contact**

Causes severe eye irritation which may damage tissue.

**Skin Contact**

Causes severe skin irritation with tissue destruction. May cause an allergic skin reaction. May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause skin defatting with prolonged exposure.

**Ingestion**

May be fatal or cause blindness if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression. Aspiration can be a hazard if this material is swallowed.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage. Prolonged or repeated exposure may cause reproductive system damage. May cause birth defects.

**Exposure Levels**

No data available

**Interactive effects**

Eye ailments. Skin disorders.

**Data limitations**

No data available

Substances	CAS Number	Skin corrosion/irritation
Terpene hydrocarbon by-products	68956-56-9	Causes moderate skin irritation. (Rabbit)
Methanol	67-56-1	Non-irritating to the skin (Rabbit)
Coco diethanolamide		Irritating to skin. (Rabbit)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Causes severe skin irritation with tissue destruction. (Rabbit)
Nonylphenol ethoxylate		Irritating to skin. (similar substances)
Linanool		Causes moderate skin irritation. (Rabbit)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Causes skin irritation.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Causes moderate skin irritation.
Citronellol	106-22-9	Causes moderate skin irritation. (Rabbit)
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Terpene hydrocarbon by-products	68956-56-9	Causes moderate eye irritation. (Rabbit) (similar substances)
Methanol	67-56-1	Non-irritating to the eye (Rabbit)
Coco diethanolamide		Irritating to eyes. (Rabbit)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Causes severe eye irritation which may damage tissue. (Rabbit)
Nonylphenol ethoxylate		Irritating to eyes. (similar substances)
Linanool		Causes moderate eye irritation. (Rabbit)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Causes severe eye irritation.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Causes severe eye irritation which may damage tissue.
Citronellol	106-22-9	Causes moderate eye irritation. (Rabbit)
Isopropanol	67-63-0	Causes severe eye irritation. (Rabbit)



Substances	CAS Number	Skin Sensitization
Terpene hydrocarbon by-products	68956-56-9	May cause an allergic skin reaction. (mouse) (similar substances)
Methanol	67-56-1	Did not cause sensitization on laboratory animals (guinea pig)
Coco diethanolamide		Did not cause sensitization on laboratory animals (guinea pig)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Nonylphenol ethoxylate		Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Linanool		Patch test on human volunteers did not demonstrate irritating properties
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	May cause sensitization by skin contact (guinea pig) (mouse)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	May cause sensitization by skin contact (mouse)
Citronellol	106-22-9	May cause sensitization by skin contact (mouse)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Terpene hydrocarbon by-products	68956-56-9	No information available
Methanol	67-56-1	No information available
Coco diethanolamide		No information available
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	No information available
Nonylphenol ethoxylate		No information available
Linanool		No information available
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	No information available
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	No information available
Citronellol	106-22-9	No information available
Isopropanol	67-63-0	No information available

Substances	CAS Number	Mutagenic Effects
Terpene hydrocarbon by-products	68956-56-9	In vitro tests did not show mutagenic effects
Methanol	67-56-1	The weight of evidence from available in vitro and in vivo studies indicates that this substance is not expected to be mutagenic.
Coco diethanolamide		In vitro tests did not show mutagenic effects Some in vivo tests have shown mutagenic effects.
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	In vitro tests did not show mutagenic effects (similar substances)
Nonylphenol ethoxylate		In vitro tests did not show mutagenic effects (similar substances)
Linanool		In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Citronellol	106-22-9	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Terpene hydrocarbon by-products	68956-56-9	Did not show carcinogenic effects in animal experiments (similar substances)
Methanol	67-56-1	No data of sufficient quality are available.
Coco diethanolamide		No data of sufficient quality are available.

Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Did not show carcinogenic effects in animal experiments (similar substances)
Nonylphenol ethoxylate		Did not show carcinogenic effects in animal experiments (similar substances)
Linanol		No data of sufficient quality are available.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Did not show carcinogenic effects in animal experiments (similar substances)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Did not show carcinogenic effects in animal experiments (similar substances)
Citronellol	106-22-9	Did not show carcinogenic effects in animal experiments (similar substances)
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Terpene hydrocarbon by-products	68956-56-9	Did not show teratogenic effects in animal experiments. (similar substances)
Methanol	67-56-1	Experiments have shown reproductive toxicity effects on laboratory animals
Coco diethanolamide		Did not show teratogenic effects in animal experiments.
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Nonylphenol ethoxylate		Not a confirmed teratogen or embryotoxin. (similar substances)
Linanol		Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Animal testing did not show any effects on fertility.
Citronellol	106-22-9	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - single exposure
Terpene hydrocarbon by-products	68956-56-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Methanol	67-56-1	May cause disorder and damage to the Central Nervous System (CNS)
Coco diethanolamide		No significant toxicity observed in animal studies at concentration requiring classification.
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	No data of sufficient quality are available.
Nonylphenol ethoxylate		No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Linanol		No data of sufficient quality are available.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	May cause respiratory irritation.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	May cause respiratory irritation.
Citronellol	106-22-9	No information available
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.

Substances	CAS Number	STOT - repeated exposure
Terpene hydrocarbon by-products	68956-56-9	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Methanol	67-56-1	No data of sufficient quality are available.
Coco diethanolamide		No data of sufficient quality are available.
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	No data of sufficient quality are available.
Nonylphenol ethoxylate		No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Linanool		No significant toxicity observed in animal studies at concentration requiring classification.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	No significant toxicity observed in animal studies at concentration requiring classification.
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	No significant toxicity observed in animal studies at concentration requiring classification.
Citronellol	106-22-9	No significant toxicity observed in animal studies at concentration requiring classification.
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Terpene hydrocarbon by-products	68956-56-9	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Methanol	67-56-1	Not applicable
Coco diethanolamide		Not applicable
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Not applicable
Nonylphenol ethoxylate		Not applicable
Linanool		Not applicable
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Not applicable
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Not applicable
Citronellol	106-22-9	Not applicable
Isopropanol	67-63-0	Not applicable

## 12. Ecological Information

### Ecotoxicity

#### Product Ecotoxicity Data

No data available

#### Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Terpene hydrocarbon by-products	68956-56-9	ErC50 (72h) 4.779 mg/L (Pseudokirchnerella subcapitata) EC50 (72h) 63.59 mg/L (Skeletonema costatum)	LC50 (96h) 5.07 mg/L (Danio rerio) LC50 (96h) > 65 mg/L (Cyprinodon variegatus)	No information available	EL50 (48h) 1.4 - 2.7 mg/L (Daphnia magna) EC50 (48h) 155 mg/L (Acartia tonsa)
Methanol	67-56-1	ErC50 (96h) 22000 mg/L (Pseudokirchnerella subcapitata)	LC50 28200 mg/L (Pimephales promelas) LC50 (96h) 12700 – 15400 mg/L (Lepomis macrochirus)	IC50 (3h) > 1000 mg/L (activated sludge)	EC50 (96h) 18260 mg/L (Daphnia magna) NOEC (21d) 122 mg/L (Daphnia magna, Reproduction)
Coco diethanolamide	Proprietary	LC50 (96h) 3.6 mg/L (Brachydanio rerio)	EC50 (72h) 2.2 mg/L (Scenedesmus subspicatus)	No information available	EC50 (48h) 2.25 mg/L (Ceriodaphnia dubia) NOEC (21d) 1.0 mg/L (Daphnia magna)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	No information available	LC50(96h): 0.28 mg/L (Pimephales promelas)	No information available	EC50(48h): 0.0059 mg/L (Daphnia magna) NOEC(34d): 0.032 mg/L (Daphnia magna)
Nonylphenol ethoxylate	Proprietary	EC50 (48h) 15 mg/L (Lemna minor) EC50 (48h) 17 mg/L (Scenedesmus quadricauda)	LC50 (48h) 16.4 mg/L (Poecilia reticulata)	No information available	LC50 (48h) 18.2 mg/L (Daphnia magna)
Linanool	Proprietary	EC50(96h): 88.3 mg/L (Desmodesmus subspicatus)	LC50(96h): 27.8 mg/L (Oncorhynchus mykiss)	EC50(3h): > 100 mg/L (activated sludge, domestic)	No information available

2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	ErC50(72h): 9.54 mg/L (Pseudokirchnerella subcapitata)	LC50(96h): 20.3 mg/L (Danio rerio)	EC50(3h): 241 mg/L (activated sludge)	EC50(48h): 32.4 mg/L (Daphnia magna)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	EC50(72h): 13.1 mg/L (Desmodesmus subspicatus)	LC50(96h): 22 mg/L (Danio rerio)	EC50(30m): 70 mg/L (Activated sludge)	EC50(48h): 10.8 mg/L (Daphnia magna)
Citronellol	106-22-9	EC50(72h): 2.4 mg/L (Scenedesmus subspicatus)	LC50(96h): 14.66 mg/L (Leuciscus idus)	No information available	EC50(48h): 17.48 mg/L (Daphnia magna)
Isopropanol	67-63-0	EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (Scenedesmus quadricauda)	LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata)	TT (16h) 1050 mg/L (Pseudomonas putida)	EC50 (48h) 13,299 mg/L (Daphnia magna) EC50 (24h) > 10,000 mg/L (Daphnia magna)

## 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Terpene hydrocarbon by-products	68956-56-9	Readily biodegradable (83% @ 28d)
Methanol	67-56-1	(95-97% @ 20d)
Coco diethanolamide	Proprietary	Readily biodegradable (84% @ 28d)
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	Readily biodegradable (60% @ 15d)
Nonylphenol ethoxylate	Proprietary	No information available
Linanol	Proprietary	Readily biodegradable (62.4% @ 28d)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	Readily biodegradable (90% @ 28d)
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	Readily biodegradable (94% @ 28d)
Citronellol	106-22-9	Readily biodegradable (80 - 90% @ 28d)
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)

## 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Terpene hydrocarbon by-products	68956-56-9	5.7
Methanol	67-56-1	-0.77 BCF = 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)
Coco diethanolamide	Proprietary	No information available
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	3.91
Nonylphenol ethoxylate	Proprietary	3.93 BCF: 7.6 - 16 (Oryzias latipes)
Linanol	Proprietary	2.84
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	2.76
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	2.6
Citronellol	106-22-9	3.41
Isopropanol	67-63-0	0.05

## 12.4. Mobility in soil

Substances	CAS Number	Mobility
Terpene hydrocarbon by-products	68956-56-9	No information available
Methanol	67-56-1	No information available
Coco diethanolamide	Proprietary	No information available
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	No information available
Nonylphenol ethoxylate	Proprietary	No information available
Linanol	Proprietary	No information available
2,6-Octadien-1-ol, 3,7-dimethyl-, (2Z)-	106-25-2	KOC = 94.15 L/kg
2,6-Octadien-1-ol, 3,7-dimethyl-, (2E)-	106-24-1	KOC = 70.79
Citronellol	106-22-9	KOC = 70.79

Isopropanol	67-63-0	KOC = 1.5
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**12.6. Other adverse effects****Endocrine Disruptor Information**

This product contains ethoxylated nonylphenols

**13. Disposal Considerations****Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

**14. Transport Information****Transportation Information**

<b>UN Number:</b>	UN1993
<b>UN Proper Shipping Name:</b>	Flammable Liquid, N.O.S. (Contains Methanol, Terpenes)
<b>Transport Hazard Class(es):</b>	3
<b>Packing Group:</b>	III
<b>Environmental Hazards:</b>	Marine Pollutant

**Special precautions during transport**

None

**HazChem Code**

3[Y]E

**15. Regulatory Information****Safety, health and environmental regulations specific for the product****International Inventories**

<b>Australian AICS Inventory</b>	All components listed on inventory or are exempt.
<b>New Zealand Inventory of Chemicals</b>	All components listed on inventory or are exempt.
<b>EINECS Inventory</b>	This product, and all its components, complies with EINECS
<b>US TSCA Inventory</b>	All components listed on inventory or are exempt.
<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.

**Poisons Schedule number**

S6

**16. Other information****Date of preparation or review**

**Revision Date:** 28-May-2015

**Revision Note**

SDS sections updated: 2

**Full text of R-phrases referred to under Sections 2 and 3**

R10 Flammable.  
R21 Harmful in contact with skin.  
R22 Harmful if swallowed.  
R23/24/25 Toxic by inhalation, by contact with skin, and if swallowed.  
R34 Causes burns.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R43 May cause sensitization by skin contact.  
R61 May cause harm to the unborn child.  
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R65 Harmful: may cause lung damage if swallowed.  
R67 Vapours may cause drowsiness and dizziness.  
R68/20/22 Harmful: possible risk of irreversible effects through inhalation and if swallowed.

**Full text of H-Statements referred to under sections 2 and 3**

H225 - Highly flammable liquid and vapor  
H226 - Flammable liquid and vapor  
H301 - Toxic if swallowed  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H311 - Toxic in contact with skin  
H312 - Harmful in contact with skin  
H314 - Causes severe skin burns and eye damage  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H319 - Causes serious eye irritation  
H331 - Toxic if inhaled  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H360 - May damage fertility or the unborn child  
H370 - Causes damage to organs  
H371 - May cause damage to organs  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H411 - Toxic to aquatic life with long lasting effects

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abbreviations or acronyms used**

Not applicable

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

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**End of Safety Data Sheet**