HALLIBURTON

SAFETY DATA SHEET

DCA-32011

Revision Date: 28-Apr-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-32011

Other means of Identification

Synonyms: None

Product Code: HM007756

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 1 800 686 951
Fax Number: 61 (08) 9455 5300

E-Mail address: fdunexchem@halliburton.com

Emergency phone number

+ 61 1 800 686 951

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
Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 2 - H319
Skin Sensitization	Category 1 - H317
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H336
Chronic Aquatic Toxicity	Category 2 - H411
Flammable liquids.	Category 2 - H225

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Not Hazardous

Hazard Statements

H225 - Highly flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

Prevention

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
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/eye protection/face protection

Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P370 + P378 - In case of fire: Use water spray for extinction
P391 - Collect spillage

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P403 + P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Terpenes and Terpenoids, sweet orange-oil	68647-72-3
Isopropanol	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
F - Highly Flammable.
Xi - Irritant.
Xn - Harmful.
N - Dangerous For The Environment.

Risk Phrases
R10 Flammable.
R43 May cause sensitization by skin contact.
R53 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.
R36/38 Irritating to eyes and skin.

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	10 - 30%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Asp. Tox. 1 (H304) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)
Isopropanol	67-63-0	10 - 30%	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 Check for and remove contact lenses if present. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.

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. Rinse mouth. Never give anything by mouth to an unconscious person.

Symptoms caused by exposure
Causes eye irritation Causes skin irritation. May cause allergic skin reaction. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause headache, dizziness, and other central nervous system effects.

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

Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

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 harmful gases.

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

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

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store in a well ventilated area. Store in a cool, dry location. Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Terpene containing products should be stored in phenolic-lined metal, stainless steel, PET, or fluorinated plastic containers. 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
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Not applicable	Not applicable
Isopropanol	67-63-0	TWA: 400 ppm TWA: 983 mg/m^3 STEL: 500 ppm STEL: 1230 mg/m^3	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	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.
Hand Protection	Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.4 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. 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	None known.
Environmental Exposure Controls	No information available

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	**Color:**	Light yellow
Odor:	Alcohol	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	6-8
Freezing Point/Range	<6.67 °C
Melting Point/Range	No data available
Boiling Point/Range	
Flash Point	22.2 °C / 72 °F PMCC
upper flammability limit	
lower flammability limit	
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.906 - 0.966
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
Bulk Density	7.56 - 8.06 lbs/gal

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. Iodine pentafluorethylene Strong acids. Strong alkalis.
10.6. Hazardous Decomposition Products
Oxides of nitrogen. Carbon monoxide and carbon dioxide.

11. Toxicological Information

Information on routes of exposure
Principle Route of Exposure Eye or skin contact, inhalation. Ingestion.

Sympotoms related to exposure
Most Important Symptoms/Effects
Causes eye irritation Causes skin irritation. May cause allergic skin reaction. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause headache, dizziness, and other central nervous system effects.

Numerical measures of toxicity

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	4400 mg/kg (Rat) (similar substance)	> 5000 mg/kg (Rabbit)	> 1000 mg/kg (Mouse)
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 eye irritation.
Skin Contact Causes skin irritation. May cause an allergic skin reaction. May cause skin defatting with prolonged exposure.
Ingestion Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Exposure Levels
No data available

Interactive effects
Eye ailments. Skin disorders.

Data limitations
No data available

Substances	CAS Number	Skin corrosion/irritation
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Causes moderate skin irritation. (Rabbit)
Isopropanol	67-63-0	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Causes eye irritation (Rabbit)
Isopropanol	67-63-0	Causes moderate eye irritation. (Rabbit)

Substances	CAS Number	Skin Sensitization
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	May cause an allergic skin reaction. (mouse) (similar substances)
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	No information available
Isopropanol	67-63-0	No information available

Substances	CAS Number	Mutagenic Effects
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	The weight of evidence from available in vitro and in vivo studies indicates that this substance is not expected to be mutagenic. (similar substances)
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
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	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
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Did not show teratogenic effects in animal experiments. (similar substances)
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - single exposure
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.

Substances	CAS Number	STOT - repeated exposure
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
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
Terpenes and Terpenoids, sweet	68647-72-3	No information available	LC50 (96h) 0.72 mg/L (Pimephales promelas)	No information available	LC50 (48) 34.73 mg/L (Acartia tonsa)

orange-oil			(similar substance) LC50 (96h) >1000 mg/L (Scophthalmus maximus)		EC50 (48h) 0.577 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
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	Readily biodegradable (62.1% @ 28d)
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	5.3 BCF = 360.5
Isopropanol	67-63-0	0.05

12.4. Mobility in soil

Substances	CAS Number	Mobility
Terpenes and Terpenoids, sweet orange-oil	68647-72-3	KOC = 1984
Isopropanol	67-63-0	KOC = 1.5

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to 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

UN Number: UN1993
UN Proper Shipping Name: Flammable Liquid, N.O.S. (Contains Isopropanol, Citrus Terpenes)
Transport Hazard Class(es): 3
Packing Group: II
Environmental Hazards: Not applicable

Special precautions during transport

None

HazChem Code

3[Y]E

15. Regulatory Information

Safety, health and environmental regulations specific for the product

International Inventories

Australian AICS Inventory	All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals	All components listed on inventory or are exempt.
EINECS Inventory	This product does not comply with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Poisons Schedule number
None Allocated

16. Other information

Date of preparation or review

Revision Date: 28-Apr-2015

Revision Note
SDS sections updated: 2

Full text of R-phrases referred to under Sections 2 and 3
R10 Flammable.
R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.
R53 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.

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
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 abreviations or acronyms used
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road AS/NZS 1715 - New Zeland Standard on Selection, use and maintenance of respiratory protective equipment bw – body weight C - Celsius CAS – Chemical Abstracts Service CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures d - day EC – European Commission EC10 – Effective Concentration 10% EC50 – Effective Concentration 50% EEC – European Economic Community EN 374 - European standard on Protective gloves against chemicals and micro-organisms EN 149 - European standard on filtering halfmasks to protect against particles ErC50 – Effective Concentration growth rate 50% FFP - Filtering Facepieces h - hour IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk IATA/ICAO - International Air Transport Association / International Civil Aviation Organization IMDG/IMO - International Maritime Dangerous Goods / International

Maritime Organization LC50 – Lethal Concentration 50% LD50 – Lethal Dose 50% LL0 – Lethal Loading 0% LL50 – Lethal Loading 50% MAK - Maximum Workplace Concentration MARPOL – International Convention for the Prevention of Pollution from Ships mg/kg – milligram/kilogram mg/L – milligram/liter mg/m^3 - milligram/cubic meter mm - millimeter mmHg - millimeter mercury NDS - OEL-TWA [Poland najwyisze dopuszczalne stkienie na stanowisku pracy] NIOSH – National Institute for Occupational Safety and Health NOEC – No Observed Effect Concentration NTP – National Toxicology Program OEL – Occupational Exposure Limit PBT – Persistent Bioaccumulative and Toxic PC – Chemical Product category PEL – Permissible Exposure Limit ppm – parts per million PROC – Process category REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals R/H-phrases - Risk/Hazard-phrases RID - The European Agreement concerning the International Carriage of Dangerous Goods by Rail STEL – Short Term Exposure Limit SU – Sector of Use category SZW - Netherlands Ministry of Social Affairs and Employment TWA – Time-Weighted Average UN – United Nations UK - United Kingdom VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración] VLA-ED - time-weighted average values for a whole work shift [Spain valores límite ambientales para la exposición diaria] VOC – Volatile Organic Carbon vPvB – very Persistent and very Bioaccumulative w/w - weight/weight

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet