Weatherford®

Material Safety Data Sheet

WNE 352LN

1. Product and Company Identification

Material name	**WNE 352LN**
Patent Number	Not available
Revision date	July-08-2011
Version No.	9
CAS #	Mixture
Product use	Stimulation Surfactant
Manufacturer information	Weatherford Engineered Chemistry 100 Leetsdale Industrial Drive Suite A Leetsdale, PA 1505 CHEMTREC 1-800-424-9300/703-527-3887
Emergency	CHEMTREC 1-800-424-9300/703-527-3887
Supplier information	Weatherford Fracturing Technologies 515 Post Oak Blvd Suite 1000 Houston, TX 77027 US

2. Hazards Identification

Emergency overview	WARNING Flammable liquid and vapor. Will be easily ignited by heat, spark or flames. Containers may explode when heated. Harmful by inhalation and if swallowed. Irritating to eyes and skin. May cause sensitization by skin contact. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin. Prolonged exposure may cause chronic effects. Suspect cancer hazard. Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Inhalation. Ingestion. Skin contact.
Eyes	Causes eye irritation. Avoid contact with eyes.
Skin	Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). May cause sensitization by skin contact. Avoid contact with the skin.
Inhalation	Harmful if inhaled. Irritating to respiratory system. Excessive inhalation of this material causes headache, dizziness, nausea and incoordination. Do not breathe dust/fume/gas/mist/vapors/spray.

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Ingestion	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause delayed lung damage. Components of the product may be absorbed into the body by ingestion. Do not ingest.
Target organs	Eyes. Lungs. Respiratory system. Skin.
Chronic effects	Shortness of breath. Conjunctiva. May cause delayed lung damage. Prolonged skin contact may defat the skin and produce dermatitis.
Signs and symptoms	Discomfort in the chest. Shortness of breath. Corneal damage. Cough. Conjunctivitis. Defatting of the skin. Rash. Irritation.
Potential environmental effects	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
DB-964	9003-11-6	10 - 30
Alcohol C6-C12, Ethoxylated	68439-45-2	10 - 30
Isopropyl alcohol	67-63-0	7 - 13
Orange Terpenes	8028-48-6	5 - 10

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin contact	Wash off with warm water and soap. Remove and isolate contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get medical attention immediately.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Notes to physician	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General advice	Take off contaminated clothing and shoes immediately. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Get medical attention if symptoms occur. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	Flammable by OSHA criteria. Containers may explode when heated.
Extinguishing media	
Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.

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Protection of firefighters

Protective equipment and precautions for firefighters

In the event of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Move containers from fire area if you can do it without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

6. Accidental Release Measures

Personal precautions

Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep out of low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up

Clean up in accordance with all applicable regulations. Should not be released into the environment.

Large Spills: Prevent product from entering drains. Do not allow material to contaminate ground water system. Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

Other information

Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

Do not handle or store near an open flame, heat or other sources of ignition. Use only with adequate ventilation. Wash thoroughly after handling. Avoid prolonged exposure.

Storage

Keep away from heat and sources of ignition (spark or flame). Keep containers tightly closed in a cool, well-ventilated place. Store in a closed container away from incompatible materials. Store in accordance with local/regional/national/international regulation.

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8. Exposure Controls / Personal Protection

Exposure limits

ACGIH

Components	CAS #	TWA	STEL	Ceiling
Isopropyl alcohol	67-63-0	200 ppm	400 ppm	Not established

OSHA

Components	CAS #	TWA	STEL	Ceiling
Isopropyl alcohol	67-63-0	400 ppm	Not established	Not established

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields. Wear chemical goggles.

Skin protection Impervious gloves. Wear suitable protective clothing. Closed-toe shoes recommended.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. If exposure may or does exceed occupational exposure limits use a NIOSH-approved respirator to prevent overexposure.

General hygeine considerations When using do not smoke. Do not get this material in contact with eyes. Do not get this material in contact with skin. Wash hands before breaks and immediately after handling the product. When using do not eat or drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance Clear.

Color Colorless.

Odor Not available

Odor threshold Not available

Physical state Liquid.

Form Liquid.

pH 5.5 - 9

Melting point Not available

Freezing point Not available

Boiling point 213.8 °F (101 °C) estimated

Flash point 72 °F (22.2 °C)

Evaporation rate Not available

Flammability Not available.

Flammability limits in air, upper, % by volume 0.3081 % estimated

Flammability limits in air, lower, % by volume 0.0354 % estimated

Vapor pressure 2.67 hPa estimated

Vapor density Not available

Specific gravity 0.98 - 1.01

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Relative density	0.9949 g/cm3 estimated
Solubility (water)	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	111.2 °F (43.87 °C) estimated
Decomposition temperature	Not available
VOC	18.7975 % estimated
Pour point	< 10

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Heat, flames and sparks. Avoid high temperatures.
Incompatible materials	Strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Component analysis - LD50

Toxicology Data - Selected LD50s and LC50s

DB-964	9003-11-6	Oral LD50 Rat: 5700 mg/kg
Isopropyl alcohol	67-63-0	Inhalation LC50 Rat: 72.6 mg/L/4H; Oral LD50 Rat:4396 mg/kg; Dermal LD50 Rat:12800 mg/kg; Dermal LD50 Rabbit:12870 mg/kg

Sensitization	May cause sensitization by skin contact.
Local effects	Harmful by inhalation and if swallowed. Irritating to eyes and skin. May cause sensitization by skin contact.
Chronic effects	Hazardous by OSHA criteria. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.
Carcinogenicity	Hazardous by OSHA criteria.

ACGIH - Threshold Limit Values - Carcinogens

Isopropyl alcohol	67-63-0	A4 - Not Classifiable as a Human Carcinogen

Neurological effects	Not expected to be hazardous by OSHA criteria. Excessive exposure may cause central nervous system effects such as dizziness, drowsiness or headaches.
Epidemiology	Hazardous by OSHA criteria.
Further information	Symptoms may be delayed.

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12. Ecological Information

Ecotoxicity

Ecotoxicity - Freshwater Algae Data

Isopropyl alcohol	67-63-0	96 Hr EC50 Scenedesmus subspicatus: >1000 mg/L; 72 Hr EC50 Scenedesmus subspicatus: >1000 mg/L

Ecotoxicity - Freshwater Fish Species Data

Isopropyl alcohol	67-63-0	96 Hr LC50 Pimephales promelas: 9640 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 94900 mg/L [flow-through] (29 days old); 96 Hr LC50 Pimephales promelas: 61200 mg/L [flow-through] (31 days old)

Ecotoxicity - Microtox Data

Isopropyl alcohol	67-63-0	5 min EC50 Photobacterium phosphoreum: 35390 mg/L

Ecotoxicity - Water Flea Data

Isopropyl alcohol	67-63-0	48 Hr EC50 Daphnia magna: 13299 mg/L

Environmental effects

Ecotoxicity - Freshwater Algae Data

Isopropyl alcohol	67-63-0	96 Hr EC50 Scenedesmus subspicatus: >1000 mg/L; 72 Hr EC50 Scenedesmus subspicatus: >1000 mg/L

Ecotoxicity - Freshwater Fish Species Data

Isopropyl alcohol	67-63-0	96 Hr LC50 Pimephales promelas: 9640 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 94900 mg/L [flow-through] (29 days old); 96 Hr LC50 Pimephales promelas: 61200 mg/L [flow-through] (31 days old)

Ecotoxicity - Microtox Data

Isopropyl alcohol	67-63-0	5 min EC50 Photobacterium phosphoreum: 35390 mg/L

Ecotoxicity - Water Flea Data

Isopropyl alcohol	67-63-0	48 Hr EC50 Daphnia magna: 13299 mg/L

Aquatic toxicity Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

13. Disposal Considerations

Waste codes D001: Waste Flammable material with a flash point <140 F

Disposal instructions Do not contaminate ponds, waterways or ditches with chemical or used container. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose in accordance with all applicable regulations.

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14. Transport Information

Department of Transportation (DOT) Requirements

Basic shipping requirements:

Proper shipping name	Flammable liquids, n.o.s. (ISOPROPYL ALCOHOL, HEAVY AROMATIC NAPHTHA)
Hazard class	3
UN number	UN1993
Packing group	II
Additional information:	
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
ERG number	128

Department of Transportation (DOT) Requirements

Bulk

Basic shipping requirements:

Proper shipping name	Flammable liquids, n.o.s. (ISOPROPYL ALCOHOL, HEAVY AROMATIC NAPHTHA)
Hazard class	3
UN number	UN1993
Packing group	II
Additional information:	
Special provisions	IB2, T7, TP1, TP8, TP28
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242
ERG number	128

Canadian Transportation of Dangerous Goods (TDG) Requirements

Basic shipping requirements:

Proper shipping name	FLAMMABLE LIQUID, N.O.S. (ISOPROPYL ALCOHOL, HEAVY AROMATIC NAPHTHA)
Hazard class	3
UN number	UN1993
Packing group	II
Additional information:	
Special provisions	16
ERG number	128

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IMDG

Basic shipping requirements:

Proper shipping name	FLAMMABLE LIQUID, N.O.S. (ISOPROPYL ALCOHOL, HEAVY AROMATIC NAPHTHA)
Hazard class	3
UN number	1993
Packing group	II

IATA

Basic shipping requirements:

Proper shipping name	Flammable liquid, n.o.s. (ISOPROPYL ALCOHOL, HEAVY AROMATIC NAPHTHA)
Hazard class	3
UN number	1993
Packing group	II

15. Regulatory Information

Labelling

Contains Alcohol C6-C12, Ethoxylated, DB-964, Isopropyl alcohol, Orange Terpenes

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

FEMA (Flavor and Extract Manufacturers Association) - FEMA Numbers

Isopropyl alcohol	67-63-0	2929

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

Isopropyl alcohol	67-63-0	1.0 % de minimis concentration (only if manufactured by the strong acid process, no supplier notification)

U.S. - FDA - Color Additives Conditionally Approved for Use in Foods

Isopropyl alcohol	67-63-0	21 CFR 73.1

U.S. - FDA - Direct Food Additives

DB-964	9003-11-6	21 CFR 173.340
Isopropyl alcohol	67-63-0	21 CFR 172.515, 21 CFR 173.240, 21 CFR 173.340

U.S. - FDA - Food Additives Generally Recognized as Safe (GRAS)

Orange Terpenes	8028-48-6	21 CFR 182.20

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity

None

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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

International regulations

Canada - WHMIS - Ingredient Disclosure List

Isopropyl alcohol	67-63-0	1 %

State regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

U.S. - Massachusetts - Right To Know List

Isopropyl alcohol	67-63-0	Present

U.S. - Minnesota - Hazardous Substance List

Isopropyl alcohol	67-63-0	Present

U.S. - New Jersey - Right to Know Hazardous Substance List

Isopropyl alcohol	67-63-0	sn 1076; sn 2381 (strong-acid process manufacture)

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

Isopropyl alcohol	67-63-0	Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

Isopropyl alcohol	67-63-0	Toxic; Flammable

U.S. - Texas - Effects Screening Levels - Long Term

Isopropyl alcohol	67-63-0	320 ppb ESL (odor); 785 µg/m3 ESL (odor)

U.S. - Texas - Effects Screening Levels - Short Term

Isopropyl alcohol	67-63-0	3200 ppb ESL (odor); 7850 µg/m3 ESL (odor)

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16. Other Information

HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 3 Instability: 0
Prepared by	Product Stewardship 515 Post Oak Blvd Houston, TX 77027 +1-713-968-2306
Disclaimer	THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.
Issue date	July-08-2011
MSDS sections updated	Product and Company Identification: Alternate Trade Names Hazards Identification: Specific hazards Toxicological Information: Carcinogenicity

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