HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

FE-1A ACIDIZING COMPOSITION

Revision Date: 14-Sep-2015 **Revision Number:** 41

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

1.1. Product Identifier

Product Name FE-1A ACIDIZING COMPOSITION
Internal ID Code HM000680

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

Recommended Use Additive
Sector of use Refer to the Annex for a listing of uses.

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute Oral Toxicity	Category 4 - (H302)
Acute Inhalation Toxicity - Vapors	Category 3 - (H331)
Skin Corrosion / irritation	Category 1 A - (H314)
Serious Eye Damage / Eye Irritation	Category 1 - (H318)
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H335)
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H226 - Flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H302 - Harmful if swallowed
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Contains

Substances	**CAS Number**
Acetic anhydride	108-24-7
Acetic acid	64-19-7

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.2. Mixtures

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Acetic anhydride	203-564-8	108-24-7	60 - 100%	Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)	01-2119486470-36
Acetic acid	200-580-7	64-19-7	30 - 60%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Flam. Liq. 3 (H226)	01-2119475328-30

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

Eyes	In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2. Most Important symptoms and effects, both acute and delayed

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. Harmful if swallowed. Toxic if inhaled. May cause respiratory irritation.

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

Notes to Physician Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide, dry chemical, foam.

Extinguishing media which must not be used for safety reasons

Water must not be used with open containers.

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards

May be ignited by heat, sparks or flames. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Reaction with water may be highly exothermic.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition. Use appropriate protective equipment. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.
See Section 8 for additional information

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. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Store away from alkalis. Store away from oxidizers. Store away from water. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store in a cool well ventilated area. Store locked up. Product has a shelf life of 60 months.

7.3. Specific End Use(s)

Exposure Scenario Please refer to the attached Annex for a listing of exposure scenarios.

Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Acetic anhydride	108-24-7	Not applicable	TWA: 0.5 ppm TWA: 2.5 mg/m³ STEL: 2 ppm STEL: 10 mg/m³	2,5 mg/m³	STEL: 5 ppm STEL: 20 mg/m³
Acetic acid	64-19-7	10 ppm	Not applicable	Not applicable	10 ppm

Substances	CAS Number	Germany	Spain	Portugal	Finland
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 21 mg/m³	TWA: 5 ppm TWA: 21 mg/m³	TWA: 5 ppm	STEL: 5 ppm STEL: 21 mg/m³
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ 15 ppm STEL [VLA-EC]; 37 mg/m³ STEL [VLA-EC]	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm	TWA: 5 ppm TWA: 13 mg/m³ STEL: 10 ppm STEL: 25 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Acetic anhydride	108-24-7	TWA: 5 ppm TWA: 20 mg/m³ STEL" 10 ppm STEL" 40 mg/m³	0.5 ppm TWA; 2.5 mg/m³ TWA 2 ppm STEL; 10 mg/m³ STEL	TWA: 5 ppm TWA: 20 mg/m³ STEL: 5 ppm STEL: 20 mg/m³	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³ STEL" 20 ppm STEL" 50 mg/m³	10 ppm TWA; 25 mg/m³ TWA 15 ppm STEL; 37 mg/m³ STEL	TWA: 10 ppm TWA: 25 mg/m³ STEL: 20 ppm STEL: 50 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ STEL: 20 ppm STEL: 37.5 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Acetic anhydride	108-24-7	Not applicable	TWA: 10 mg/m³	TWA: 20 mg/m³ STEL: 20 mg/m³	TWA: 4 mg/m³
Acetic acid	64-19-7	10 ppm	TWA: 15 mg/m³ STEL: 30 mg/m³	TWA: 25 mg/m³ STEL: 25 mg/m³	TWA: 25 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Acetic anhydride	108-24-7	Not applicable	TWA: 3.6 ppm TWA: 15 mg/m³ STEL: 6 ppm STEL: 25 mg/m³	TWA: 0.5 ppm TWA: 2.5 mg/m³ STEL: 2 ppm STEL: 10 mg/m³	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³

Derived No Effect Level (DNEL) No information available.

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Acetic anhydride	4.2 mg/m³	Not available	4.2 mg/m³	12.6 mg/m³	Not available	Not available	Not available	Not available	Not available
Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Acetic acid	Not available	Not available	25 mg/m³	25 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent	Sewage	Sediment	Sediment	Air	Soil	Secondary

			release	treatment plant	(freshwater)	(marine water)			poisoning
Acetic anhydride	3.06 mg/L	0.306 mg/L	30.58 mg/L	115 mg/L	11.4 mg/kg (wet)	1.14 mg/kg (wet)	Not available	0.478 mg/kg (wet)	Not available
Acetic acid	3.06 mg/l	0.306 mg/l	30.58 mg/l	85 mg/l	11.4 mg/kg	1.14 mg/kg	Not available	0.478 mg/kg	Not available

8.2. Exposure controls

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

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Organic vapor/acid gas respirator.
Hand Protection Impervious rubber gloves.
Skin Protection Rubber boots Full protective chemical resistant clothing.
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 Do not allow material to contaminate ground water system

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid **Color:** Clear colorless
Odor: Pungent acrid **Odor Threshold:** No information available

Property Remarks/ - Method	Values
pH:	< 2
Freezing Point/Range	-9 °C
Melting Point/Range	No data available
Boiling Point/Range	126 °C / 259 °F
Flash Point	39 °C / 103 °F PMCC
Flammability (solid, gas)	No data available
upper flammability limit	19
lower flammability limit	3
Evaporation rate	0.97
Vapor Pressure	11.7
Vapor Density	3.5
Specific Gravity	1.0753
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	332 °C / 630 °F
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

SECTION 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. Do not allow water to get into container because of violent reaction.

10.5. Incompatible Materials

Strong alkalis. Strong oxidizers. Reacts with water.

10.6. Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation Causes severe respiratory irritation. Toxic by inhalation.

Eye Contact Causes severe eye burns.

Skin Contact Causes severe burns.

Ingestion Causes burns of the mouth, throat and stomach. Harmful if swallowed.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic anhydride	108-24-7	630 mg/kg (Rat)	4000 mg/kg (Rabbit)	4.1 mg/L (Rat) 4h 4.2 mg/L (Rat) 4h 1000 mg/L (Rat) 4h
Acetic acid	64-19-7	3310 mg/kg (Rat) 600 mg/kg (Rabbit) 4960 mg/kg (Mouse)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Acetic anhydride	108-24-7	Corrosive to skin
Acetic acid	64-19-7	Corrosive to skin

Substances	CAS Number	Eye damage/irritation
Acetic anhydride	108-24-7	Causes severe eye burns
Acetic acid	64-19-7	Corrosive to eyes

Substances	CAS Number	Skin Sensitization
Acetic anhydride	108-24-7	Not regarded as a sensitizer.
Acetic acid	64-19-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Acetic anhydride	108-24-7	No information available
Acetic acid	64-19-7	No information available

Substances	CAS Number	Mutagenic Effects
Acetic anhydride	108-24-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Acetic acid	64-19-7	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Acetic anhydride	108-24-7	No information available.
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Acetic anhydride	108-24-7	Not a confirmed teratogen or embryotoxin.
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility.

Substances	CAS Number	STOT - single exposure
Acetic anhydride	108-24-7	May cause respiratory irritation.
Acetic acid	64-19-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Acetic anhydride	108-24-7	Not applicable due to corrosivity of the substance.
Acetic acid	64-19-7	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Acetic anhydride	108-24-7	Not applicable
Acetic acid	64-19-7	Not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Acetic anhydride	108-24-7	EC50 (72h) >1000 mg/L (>300.82 mg/L acetate ion) (growth rate) (Skeletonema costatum) (similar substance)	LC50 265 mg/L (Leuciscus idus) LC50 (96h) >1000 mg/L (>300.82 mg/L acetate ion) (Oncorhynchus mykiss) (similar substance)	NOEC (16h) 1150 mg/L (Pseudomonas putida) (similar substance)	EC50 (24h) 55 mg/L (Daphnia magna) EC50 (48h) >1000 mg/L (>300.82 mg/L acetate ion) (Daphnia magna) (similar substance) NOEC (21d) 31.4-37.9 mg/L (Daphnia magna) (reproduction) (similar substance) EC50 (24h) 3200 mg/L (Daphnia magna) (buffered acetate ion)
Acetic acid	64-19-7	EC50 90 mg/L (Microcystis aeruginosa) EC50 (72h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Skeletonema costatum)	LC50 79 mg/L (Pimephales promelas) LC50 75 mg/L (Pimephales promelas) LC50 (96h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Oncorhynchus mykiss)	NOEC (16h) 1150 mg/L (Pseudomonas putida)	EC50 47 mg/L (Daphnia magna) LC50 32 mg/L (Artemia salina) EC50 (48h) > 1000 mg/L (>300.82 mg/L – acetate ion) (Daphnia magna) NOEC (21d) 31.4 - 37.9 mg/L (Daphnia magna) (reproduction)

12.2. Persistence and degradability

Readily biodegradable

Substances	CAS Number	Persistence and Degradability
Acetic anhydride	108-24-7	Readily biodegradable (96% @ 20d)
Acetic acid	64-19-7	Readily biodegradable (99% @ 7d)

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Acetic anhydride	108-24-7	-0.58 BCF 3.16 (Calculated)
Acetic acid	64-19-7	-0.17 BCF = 3.16 (Calculated)

12.4. Mobility in soil

Substances	CAS Number	Mobility
Acetic anhydride	108-24-7	KOC = 1.339 (Calculated)
Acetic acid	64-19-7	No information available

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Acetic anhydride	Not PBT/vPvB
Acetic acid	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

SECTION 14: Transport Information

IMDG/IMO

UN Number: UN2920
UN Proper Shipping Name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es): 8 (3)
Packing Group: II
Environmental Hazards: Not applicable

RID

UN Number: UN2920
UN Proper Shipping Name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es): 8 (3)
Packing Group: II
Environmental Hazards: Not applicable

ADR

UN Number: UN2920
UN Proper Shipping Name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es): 8 (3)
Packing Group: II
Environmental Hazards: Not applicable

IATA/ICAO

UN Number: UN2920
UN Proper Shipping Name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)
Transport Hazard Class(es): 8 (3)
Packing Group: II
Environmental Hazards: Not applicable

14.1. UN Number: UN2920

14.2. UN Proper Shipping Name: Corrosive Liquid, Flammable, N.O.S. (Contains Acetic Anhydride, Acetic Acid)

14.3. Transport Hazard Class(es): 8 (3)

14.4. Packing Group: II

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS Inventory This product, and all its components, complies with EINECS
US TSCA Inventory All components listed on inventory or are exempt.
Canadian DSL Inventory All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 1: Low hazard to waters.

15.2. Chemical Safety Assessment
Yes

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

Key or legend to abbreviations and acronyms
bw – body weight
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
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
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
STEL – Short Term Exposure Limit
SU – Sector of Use category

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

Revision Date: 14-Sep-2015
Revision Note
SDS sections updated: 1

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet