

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

MSA ACID with KCl, FE-2, DCA-22001

Revision Date: 17-Jun-2014

Revision Number: 4

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product Name MSA ACID with KCl, FE-2, DCA-22001

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

Recommended Use Solvent
Sector of use SU2 - Mining, (including offshore industries)
Product category PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific
Process categories PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

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

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4 Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	112
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
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

2. Hazards Identification

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Skin Corrosion / irritation	Category 2 - (H315)
Serious Eye Damage / Eye Irritation	Category 2 - (H319)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

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

Classification Xi - Irritant.**Risk Phrases** R36/38 Irritating to eyes and skin.**2.2 Label Elements****Hazard Pictograms****Signal Word** Warning**Hazard Statements**

H315 - Causes skin irritation

H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/eye protection/face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P362 - Take off contaminated clothing and wash before reuse

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

Contains**Substances**

Alcohols, C12-16, ethoxylated

Acetic acid

CAS Number

68551-12-2

64-19-7

2.3 Other Hazards

None known

3. Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Alcohols, C12-16, ethoxylated	500-221-7	68551-12-2	0.1 - 1%	Xn; R22 Xi; R41-38 N; R50	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Acute 1 (H400)	No data available
Acetic acid	200-580-7	64-19-7	10 - 30%	R10 C; R35	Skin Corr. 1A (H314) Flam. Liq. 3 (H226)	No data available

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

4. First aid measures**4.1 Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

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.
Ingestion	Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

May cause severe eye irritation. May cause severe skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. Firefighting Measures

5.1 Extinguishing media**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Special hazards arising from the substance or mixture**Special Exposure Hazards**

Decomposition in fire may produce toxic gases.

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.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

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.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

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 in a cool well ventilated area. Keep container closed when not in use.

7.3 Specific End Use(s)**Exposure Scenario**

No information available

Other Guidelines

No information available

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable	Not applicable	Not applicable	Not applicable
Acetic acid	64-19-7	10 ppm	Not applicable	Not applicable	10 ppm

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable	Not applicable	Not applicable	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m ³ MAK: 10 ppm MAK: 25 mg/m ³	15 ppm VLA-EC; 37 mg/m ³ VLA-EC VLA-ED: 10 ppm VLA-ED: 25 mg/m ³	STEL: 15 ppm TWA: 10 ppm	STEL: 10 ppm STEL: 25 mg/m ³ TWA: 5 ppm TWA: 13 mg/m ³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable	Not applicable	Not applicable	Not applicable
Acetic acid	64-19-7	Not applicable	Not applicable	Not applicable	STEL: 20 ppm STEL: 37.5 mg/m ³ TWA: 10 ppm TWA: 25 mg/m ³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable	Not applicable	Not applicable	Not applicable
Acetic acid	64-19-7	10 ppm	NDSch: 30 mg/m ³ NDS: 15 mg/m ³	TWA: 25 mg/m ³ STEL: 25 mg/m ³	TWA: 25 mg/m ³

Substances	CAS Number	Denmark
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable
Acetic acid	64-19-7	TWA: 10 ppm TWA: 25 mg/m ³

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 acid	Not available	Not available	25 mg/m ³	25 mg/m ³	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/m ³	25 mg/m ³	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 release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
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.

Personal protective equipment**Respiratory Protection**

Organic vapor/acid gas respirator.

Hand Protection

Impervious rubber gloves.

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: Acrid
Color: Clear
Odor Threshold: No information available

Property	Values
Remarks/ - Method	
pH:	< 2.5
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	No data available
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	426 °C
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 applicable

10.2 Chemical Stability

Stable

10.3 Possibility of Hazardous Reactions

Will Not Occur

10.4 Conditions to Avoid

None anticipated

10.5 Incompatible Materials

Strong alkalis. Strong oxidizers.

10.6 Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation May cause eye burns.
Skin Contact	Causes severe skin irritation. May cause skin burns.
Ingestion	Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Alcohols, C12-16, ethoxylated	68551-12-2	1,400 mg/kg (Rats)	>2000 and < 5000 mg/kg (similar substances)	No data available
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) 4 h

Substances	CAS Number	Skin corrosion/irritation
Alcohols, C12-16, ethoxylated	68551-12-2	Irritating to skin. (rabbit) (similar substances)
Acetic acid	64-19-7	Corrosive to skin

Substances	CAS Number	Eye damage/irritation
Alcohols, C12-16, ethoxylated	68551-12-2	Severe eye irritant (rabbit) (similar substances)
Acetic acid	64-19-7	Corrosive to eyes

Substances	CAS Number	Skin Sensitization
Alcohols, C12-16, ethoxylated	68551-12-2	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Acetic acid	64-19-7	No information available

Substances	CAS Number	Respiratory Sensitization
Alcohols, C12-16, ethoxylated	68551-12-2	No information available
Acetic acid	64-19-7	No information available

Substances	CAS Number	Mutagenic Effects
Alcohols, C12-16, ethoxylated	68551-12-2	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
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
Alcohols, C12-16, ethoxylated	68551-12-2	Did not show carcinogenic effects in animal experiments (similar substances)
Acetic acid	64-19-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Alcohols, C12-16, ethoxylated	68551-12-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Acetic acid	64-19-7	Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Alcohols, C12-16, ethoxylated	68551-12-2	No information available
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Alcohols, C12-16, ethoxylated	68551-12-2	No significant toxicity observed in animal studies at concentration requiring classification.
Acetic acid	64-19-7	No significant toxicity observed in animal studies at concentration requiring classification. Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Alcohols, C12-16, ethoxylated	68551-12-2	Not applicable
Acetic acid	64-19-7	Not applicable

12. Ecological Information

12.1 Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Alcohols, C12-16, ethoxylated	68551-12-2	(similar substance) EC50(72h): 0.5 mg/L (Scenedesmus subspicatus) (similar substance) EC50(72h): 0.85 mg/L (Selenastrum capricornutum)	(similar substance) LC50(96h): 1.2 – 6.4 (Brachydanio rerio)	(similar substance) EC0(30m): >10000 mg/L (Pseudomonas putida)	(similar substance) EC50(48h): 0.5 – 1.9 mg/L
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
Alcohols, C12-16, ethoxylated	68551-12-2	Expected to be readily biodegradable (similar substances)
Acetic acid	64-19-7	Readily biodegradable (>95%% @ 28d)

12.3 Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Alcohols, C12-16, ethoxylated	68551-12-2	No information available
Acetic acid	64-19-7	-0.17 BCF 3.16 (Calculated)

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

13.1 Waste treatment methods

Disposal Method

Contaminated Packaging

Disposal should be made in accordance with federal, state, and local regulations.
Follow all applicable national or local regulations.

14. Transport Information

IMDG/IMO

UN Number:	UN2790
UN Proper Shipping Name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	III

Environmental Hazards:	Not applicable
EMS:	EmS F-A, S-B

RID

UN Number:	UN2790
UN Proper Shipping Name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental hazard:	Not applicable

ADR

UN Number:	UN2790
UN Proper Shipping Name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental hazard:	Not applicable

IATA/ICAO

UN Number:	UN2790
UN Proper Shipping Name:	Acetic Acid Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental hazard:	Not applicable

Special Precautions for User None**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable**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/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK)	WGK 1: Low hazard to waters.
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15.2 Chemical Safety Assessment

No information available

16. Other Information**Full text of R-phrases referred to under Sections 2 and 3**

R10 Flammable.
R22 Harmful if swallowed.
R35 Causes severe burns.
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.

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

Revision Date: 17-Jun-2014

Revision Note

Not applicable

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

Disclaimer Statement

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End of Safety Data Sheet