

SAFETY DATA SHEET**CLLAU301**

Revision Date: 04-Mar-2015

Revision Number: 8

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), Non-Dangerous Goods according to the criteria of ADG.

1.1. Product Identifier

Product Name CLLAU301

Other means of Identification

Synonyms: None
Product Code: HM007420

Recommended use of the chemical and restrictions on use

Recommended Use Crosslinker
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), Non-Dangerous Goods according to the criteria of ADG.

Classification of the hazardous chemical

Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 1 - H318
Carcinogenicity	Category 2 - H351

Label elements, including precautionary statements**Hazard Pictograms**

**Signal Word**

Danger

Hazard Statements

H315 - Causes skin irritation

H318 - Causes serious eye damage

H351 - Suspected of causing cancer

Precautionary Statements**Prevention**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

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

P280 - Wear protective gloves/eye protection/face protection

P281 - Use personal protective equipment as required

Response

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

P332 + P313 - If skin irritation occurs: Get medical advice/attention

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

P310 - Immediately call a POISON CENTER or doctor/physician

P308 + P313 - IF exposed or concerned: Get medical advice/attention

Storage

P405 - Store locked up

Disposal

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

Contains**Substances**

Aluminum sulfate

Sulfuric acid

CAS Number

10043-01-3

7664-93-9

Other hazards which do not result in classification

None known

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

Xn - Harmful

Risk Phrases

R38 Irritating to skin.

R40 Limited evidence of a carcinogenic effect.

R41 Risk of serious damage to eyes.

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Aluminum sulfate	10043-01-3	5 - 10%	Eye Irrit. 1 (H318) Aquatic Acute 3 (H402) Aquatic Chronic 3 (H412) Met. Corr. 1 (H290)
Sulfuric acid	7664-93-9	1 - 5%	Skin Irrit. 1A (H314) Eye Irrit. 1 (H318) Carc. 1 (H350) STOT SE 3 (H335) Aquatic Acute 3 (H402)

4. First aid measures

Description of necessary 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	Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.
Skin	Wash with soap and water. Get medical attention if irritation persists.
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.

Symptoms caused by exposure

May cause severe eye irritation. May cause skin irritation. Potential carcinogen.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special Exposure Hazards

Not applicable.

Special protective equipment and precautions for fire fighters

Special Protective Equipment for Fire-Fighters

Not applicable.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

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. Neutralize with lime slurry, limestone, or soda ash. 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 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 in a cool, dry location. 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
Aluminum sulfate	10043-01-3	TWA: 2 mg/m ³	2 mg/m ³
Sulfuric acid	7664-93-9	TWA: 1 mg/m ³ STEL: 3 mg/m ³	TWA: 0.2 mg/m ³

Appropriate engineering controls

Engineering Controls

Use in a well ventilated area.

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.

Dust/mist respirator. (N95, P2/P3)

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): Butyl rubber gloves. (>= 0.7 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

Normal work coveralls.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

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
Odor: Odorless

Color: White
Odor Threshold: No information available

Property
Remarks/ - Method

Values

pH:
Freezing Point/Range
Melting Point/Range

0.80
No data available
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	1.01
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
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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.

10.6. Hazardous Decomposition Products

Oxides of sulfur.

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**

May cause severe eye irritation. May cause skin irritation. Potential carcinogen.

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

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aluminum sulfate	10043-01-3	1930 mg/kg (Rat) > 2000 < 5000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	5 mg/L (Rat, aerosol) 4h (Similar substance)
Sulfuric acid	7664-93-9	2140 mg/kg (Rat)	No data available	347 ppm (Rat, 1h) 510 mg/m ³ (Rat, 2h) 295 mg/m ³ (Rat, 4h) 375 mg/m ³ (Rat, 4h) 160 mg/m ³ (Mouse, 4h) 15 mg/m ³ (Guinea pig, 4h) 9 mg/m ³ (Guinea pig, 4h)

Immediate, delayed and chronic health effects from exposure

Inhalation May cause respiratory irritation.

Eye Contact May cause severe eye irritation.

Skin Contact May cause skin irritation.
Ingestion In large amounts: May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity Contains sulfuric acid, a potential carcinogen.

Exposure Levels

No data available

Interactive effects

None known.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Aluminum sulfate	10043-01-3	Non-irritating to the skin (rabbit)
Sulfuric acid	7664-93-9	Corrosive to skin (rabbit)

Substances	CAS Number	Eye damage/irritation
Aluminum sulfate	10043-01-3	Causes severe eye irritation. (rabbit)
Sulfuric acid	7664-93-9	Corrosive to eyes (rabbit)

Substances	CAS Number	Skin Sensitization
Aluminum sulfate	10043-01-3	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Sulfuric acid	7664-93-9	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Respiratory Sensitization
Aluminum sulfate	10043-01-3	No information available
Sulfuric acid	7664-93-9	No information available

Substances	CAS Number	Mutagenic Effects
Aluminum sulfate	10043-01-3	Not regarded as mutagenic. In vitro tests did not show mutagenic effects
Sulfuric acid	7664-93-9	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Aluminum sulfate	10043-01-3	Did not show carcinogenic effects in animal experiments
Sulfuric acid	7664-93-9	Contains sulfuric acid, a potential carcinogen.

Substances	CAS Number	Reproductive toxicity
Aluminum sulfate	10043-01-3	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Sulfuric acid	7664-93-9	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Aluminum sulfate	10043-01-3	No significant toxicity observed in animal studies at concentration requiring classification.
Sulfuric acid	7664-93-9	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Aluminum sulfate	10043-01-3	No significant toxicity observed in animal studies at concentration requiring classification.
Sulfuric acid	7664-93-9	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Aluminum sulfate	10043-01-3	Not applicable
Sulfuric acid	7664-93-9	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
Aluminum sulfate	10043-01-3	EC50(72h): 14 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50: 100 mg/L (Carassius auratus) LC50(96h): 186 mg/L (Danio rerio) LC50(42d): 15 ug/L (dissolved Aluminium) (Salmo trutta) NOEC(60d): 26 ug/L (mortality in Fry) (Salvelinus fontinalis)	EC50(180min): > 1000 mg/L (activated sludge)	EC50(48h): 136 mg/L (Daphnia magna) EC50(48h): > 200 mg/L (Daphnia magna) NOEC(8d): 3.8 mg/L (reproduction) (Ceriodaphnia dubia) (Similar substance)
Sulfuric acid	7664-93-9	EC50(72h): > 100 mg/L (growth rate) (Desmodesmus subspicatus)	LC50: >500 mg/L (Brachydanio rerio) LC50(96h) > 16 and < 28 mg/L (Lepomis macrochirus) NOEC(65d): 0.025 mg/L (fry growth) (Jordanelia floridae) NOEC(chronic): 0.31 mg/L (larval development) (Salvelinus fontinalis)	NOEC(21d): 6.61 pH (total bacteria) NOEC(37d): ca. 26 g/L (activated sludge, respiration rate) (Similar substance)	EC50(48h): 29 mg/L (Daphnia magna) EC50(48h): > 100 mg/L (Daphnia magna) NOEL(chronic): 0.15 mg/L (mortality) (Tanytarsus dissimilis)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Aluminum sulfate	10043-01-3	The methods for determining biodegradability are not applicable to inorganic substances.
Sulfuric acid	7664-93-9	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Aluminum sulfate	10043-01-3	No information available
Sulfuric acid	7664-93-9	No information available

12.4. Mobility in soil

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**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

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Special precautions during transport

None

HazChem Code

None Allocated

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, 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.

Poisons Schedule number

S6

16. Other information

Date of preparation or review

Revision Date: 04-Mar-2015

Revision Note

SDS sections updated SECTION: 2

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

R35 Causes severe burns.
R38 Irritating to skin.
R40 Limited evidence of a carcinogenic effect.
R41 Risk of serious damage to eyes.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 May cause long-term adverse effects in the aquatic environment.

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

H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer
H351 - Suspected of causing cancer
H402 - Harmful to aquatic life
H412 - Harmful 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/

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End of Safety Data Sheet