HALLIBURTON

SAFETY DATA SHEET

CLAYSEAL® PLUS

Revision Date: 08-Oct-2015 **Revision Number:** 22

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 CLAYSEAL® PLUS

Other means of Identification

Synonyms: None

Product Code: HM003604

Recommended use of the chemical and restrictions on use

Recommended Use Shale stabilizer

Uses Advised Against No information available

Supplier's name, address and phone number

Manufacturer/Supplier

Halliburton/Baroid 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

Product Emergency Telephone
Australia: + 61 1 800 686 951
Papua New Guinea: + 61 1 800 686 951
NewZealand: +64 800 451719

Fire, Police & Ambulance - Emergency Telephone
Australia: 000
Papua New Guinea: 000
New Zealand: 111

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), 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 2 - H319

Label elements, including precautionary statements

Hazard Pictograms

Signal Word Warning

Hazard Statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary Statements

Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/eye protection/face protection

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
P337 + P313 - If eye irritation persists: Get medical advice/attention

Storage None

Disposal None

Contains

Substances	**CAS Number**
Propylene glycol	57-55-6
Polyalkeneamine	Proprietary
Hydrochloric acid	7647-01-0

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 Xi - Irritant.

Risk Phrases
R36/38 Irritating to eyes and skin.

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - Australia
Propylene glycol	57-55-6	10 - 30%	

Polyalkeneamine	Proprietary	10 - 30%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)
Hydrochloric acid	7647-01-0	1 - 5%	Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290)

4. First aid measures

Description of necessary 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.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Symptoms caused by exposure

Causes eye irritation Causes skin irritation.

Medical Attention and Special Treatment

Notes to Physician Treat symptomatically

5. Fire Fighting Measures

Suitable extinguishing equipment

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

Special Exposure Hazards

Use water spray to cool fire exposed surfaces. 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.

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. 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. 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

Storage Information

Store in a cool well ventilated area. Keep container closed when not in use. Store away from oxidizers. Store away from alkalis. Product has a shelf life of 36 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
Propylene glycol	57-55-6	TWA: 150 ppm TWA: 474 mg/m³ TWA: 10 mg/m³	10 mg/m³ AIHA WEEL TWA: 10 mg/m³
Polyalkeneamine	Proprietary	Not applicable	Not applicable
Hydrochloric acid	7647-01-0	5 ppm	TWA: 2 ppm (Ceiling)

Appropriate engineering controls

Engineering Controls Use in a well ventilated area.

Personal protective equipment (PPE)

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
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 **Color:** Clear light yellow

Odor: Amine **Odor Threshold:** No information available

Property Remarks/ - Method	Values
pH:	8-9
Freezing Point/Range	-9 °C
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	> 93 °C / PMCC
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.0261 - 1.0561
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

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

None anticipated

10.5. Incompatible Materials

Strong oxidizers. 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.

Sympotoms related to exposure

Most Important Symptoms/Effects

Causes eye irritation Causes skin irritation.

Numerical measures of toxicity

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propylene glycol	57-55-6	20000 mg/kg (Rat) 22000 mg/kg (rat)	20800 mg/kg (Rabbit) > 2000 mg/kg (Rabbit)	> 317042 mg/m³ (Rabbit)
Polyalkeneamine	Proprietary	No data available	No data available	No data available
Hydrochloric acid	7647-01-0	No data available	5010 mg/kg (Rabbit) > 5010 mg/kg (Rabbit) 1449 mg/kg (Mouse)	3124 mg/L (Rat) 1h 3.2 mg/L (Mouse) 8.3 mg/L (Rat) 1405 mg/L (Rat) 554 mg/L (Mouse)

Immediate, delayed and chronic health effects from exposure

Inhalation May cause mild respiratory irritation.

Eye Contact Causes moderate eye irritation.

Skin Contact Causes moderate skin irritation.

Ingestion Irritation of the mouth, throat, and stomach.

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

Skin disorders. Eye ailments.

Data limitations

No data available

Substances	CAS Number	Skin corrosion/irritation
Propylene glycol	57-55-6	Not a dermal irritant

Polyalkeneamine		May cause moderate skin irritation.
Hydrochloric acid	7647-01-0	Causes severe burns

Substances	CAS Number	Eye damage/irritation
Propylene glycol	57-55-6	Non-irritating to the eye
Polyalkeneamine		May cause moderate eye irritation.
Hydrochloric acid	7647-01-0	Causes severe burns

Substances	CAS Number	Skin Sensitization
Propylene glycol	57-55-6	Patch test on human volunteers did not demonstrate sensitization properties Did not cause sensitization on laboratory animals
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Propylene glycol	57-55-6	No information available
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	No information available

Substances	CAS Number	Mutagenic Effects
Propylene glycol	57-55-6	In vivo tests did not show mutagenic effects.
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Propylene glycol	57-55-6	Did not show carcinogenic or teratogenic effects in animal experiments
Polyalkeneamine		No information available.
Hydrochloric acid	7647-01-0	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Propylene glycol	57-55-6	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	Embryo and fetotoxicity has been observed in female rats exposed to maternally toxic levels of hydrogen chloride (450 mg/m^3, 1hr.).

Substances	CAS Number	STOT - single exposure
Propylene glycol	57-55-6	No significant toxicity observed in animal studies at concentration requiring classification.
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Propylene glycol	57-55-6	No significant toxicity observed in animal studies at concentration requiring classification.
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Propylene glycol	57-55-6	Not applicable
Polyalkeneamine		No information available
Hydrochloric acid	7647-01-0	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
Propylene glycol	57-55-6	EC50(48h): (growth rate) 34100 mg/L (Selenastrum capricornutum)	LC50(96h): 40613 mg/L (Oncorhynchus mykiss) LC50(96h): 54900 mg/L	NOEC(18h): >20000 mg/L (Pseudomonas putida)	LC50(96h): 18800 mg/L (Americamysis bahia) LC50(48h): 18340 mg/L

		EC50(48h): (growth rate) 19000 mg/L (Skeletonema costatum)	(Pimephales promelas) NOEC(7d): (growth rate) 11530 mg/L (Pimephales promelas)		(Ceriodaphnia dubia) NOEC(7d): (growth rate): 13020 mg/L (Ceriodaphnia sp.)
Polyalkeneamine	Proprietary	EC50 (72h) (growth rate) 1000 mg/L (Skeletonema costatum)	LC50 (96h) 562.3 mg/L (Scophthalmus maximus)	No information available	LC50 (48h) 2000 mg/L (Acartia tonsa)
Hydrochloric acid	7647-01-0	No information available	LC50 282 mg/L (Gambusia affinis) LC50 20.5 mg/L (Lepomis macrochirus) LC50 (96h) 3.25 – 3.5 (pH) (Lepomis macrochirus)	EC50 (3h) >= 5 and <= 5.5 (pH) (Activated sludge, domestic)	EC50 (48h) 4.9 (pH) (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Propylene glycol	57-55-6	No information available
Polyalkeneamine	Proprietary	No information available
Hydrochloric acid	7647-01-0	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Propylene glycol	57-55-6	No information available
Polyalkeneamine	Proprietary	No information available
Hydrochloric acid	7647-01-0	0.25

12.4. Mobility in soil

Substances	CAS Number	Mobility
Propylene glycol	57-55-6	No information available
Polyalkeneamine	Proprietary	No information available
Hydrochloric acid	7647-01-0	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	Product contains one or more components not listed on inventory.
New Zealand Inventory of Chemicals	Product contains one or more components not listed on inventory.
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	Product contains one or more components not listed on the inventory.

Poisons Schedule number
None Allocated

16. Other information

Date of preparation or review

Revision Date: 08-Oct-2015

Revision Note
SDS sections updated: 2

Full text of R-phrases referred to under Sections 2 and 3
R36/38 Irritating to eyes and skin.

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
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H335 - May cause respiratory irritation

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
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic

ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/
OSHA
ECHA C&L

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End of Safety Data Sheet