HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

SULFURIC ACID, STANDARDIZED 0.1N (51301, 51308, 51325)

Revision Date: 15-Sep-2015 **Revision Number:** 14

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

1.1. Product Identifier

Product Name SULFURIC ACID, STANDARDIZED 0.1N (51301, 51308, 51325)
Internal ID Code HM004006

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

Recommended Use Reagent

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

Not classified

2.2. Label Elements

Not classified

Hazard Pictograms

Signal Word **Not Classified**

Hazard Statements
Not Classified

Precautionary Statements - EU (§28, 1272/2008)
Not Classified

Contains

Substances	**CAS Number**
Sulfuric acid	7664-93-9

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.
Sulfuric acid	231-639-5	7664-93-9	0.1 - 1%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) Carc. 2 (H351) STOT SE 3 (H335) Met. Corr. 1 (H290)	No data available

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, 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. Give nothing by mouth. Obtain immediate medical attention.

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

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
Water fog, carbon dioxide, foam, dry chemical.
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

Use water spray to cool fire exposed surfaces. Do not allow runoff to enter waterways. Decomposition in fire may produce harmful 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

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 with lime slurry, limestone, or soda ash. 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

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

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Sulfuric acid	7664-93-9	Not applicable	0.3 mg/m³	0.05 mg/m³	1 mg/m³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Sulfuric acid	7664-93-9	TWA: 0.1 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³ STEL: 0.1 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Sulfuric acid	7664-93-9	TWA: 0.1 mg/m³ STEL" 0.2 mg/m³	0.05 ppm TWA 0.15 ppm STEL (calculated)	TWA: 0.1 mg/m³ STEL: 0.1 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Sulfuric acid	7664-93-9	Not applicable	TWA: 1 mg/m³ TWA: 0.05 mg/m³ STEL: 3 mg/m³	TWA: 1 mg/m³ STEL: 1 mg/m³	TWA: 1 mg/m³ TWA: 0.05 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Sulfuric acid	7664-93-9	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³

Derived No Effect Level (DNEL) No information available.

Worker

General Population

Predicted No Effect Concentration (PNEC) No information 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 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 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: Odorless **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	1	
Freezing Point/Range	No data available	
Melting Point/Range	No data available	
Boiling Point/Range	No data available	
Flash Point	No data available	
Flammability (solid, gas)	No data available	
upper flammability limit	No data available	
lower flammability limit	No data available	
Evaporation rate	0.5	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific Gravity	1	
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

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

None anticipated

10.5. Incompatible Materials

Strong alkalis. Reducing agents. Alcohols. Aldehydes. Acrylates. Prolonged contact with aluminum, lead, or zinc may liberate flammable hydrogen.

10.6. Hazardous Decomposition Products

Oxides of sulfur. Toxic fumes.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

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

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

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	7664-93-9	2140 mg/kg (Rat)	No data available	347 ppm (Rat) 1h 510 mg/m³ (Rat) 2h 295 mg/m³ (Rat) 4h 375 mg/m³ (Rat) 4h 160 mg/m³ (Mouse) 4h 15 mg/m³ (Guinea pig) 4h 9 mg/m³ (Guinea pig) 4h

Substances	CAS Number	Skin corrosion/irritation
Sulfuric acid	7664-93-9	Causes severe burns

Substances	CAS Number	Eye damage/irritation
Sulfuric acid	7664-93-9	Causes serious eye damage

Substances	CAS Number	Skin Sensitization
Sulfuric acid	7664-93-9	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Sulfuric acid	7664-93-9	No information available

Substances	CAS Number	Mutagenic Effects
Sulfuric acid	7664-93-9	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Sulfuric acid	7664-93-9	This substance is a potential carcinogen.

Substances	CAS Number	Reproductive toxicity
Sulfuric acid	7664-93-9	Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Sulfuric acid	7664-93-9	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Sulfuric acid	7664-93-9	Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Sulfuric acid	7664-93-9	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
Sulfuric acid	7664-93-9	ErC50 (72h) > 100 mg/L (Desmodesmus subspicatus)	LC50 (96h) > 500 mg/l (Danio rerio) LC50 (96h) 16-28 mg/L (Lepomis macrochirus) LC50 (96h) 42 mg/L (Gambusia affinis) NOEC (65d) 0.025 mg/L (fry growth) (Jordanella floridae) NOEC 0.31 mg/L (larval development) (Salvelinus fontinalis)	NOEC (21d) 6.61 pH (total bacteria) NOEC (37d) ~ 26000 mg/L (Activated sludge, respiration rate) (Similar substance)	EC50 (48h) 29 mg/L (Daphnia magna) EC50 (48h) > 100 mg/L (Daphnia magna) NOEL 0.15 mg/L (mortality) (Tanytarsus dissimilis) EC50 (24h) 29 mg/L (Daphnia magna) EC50 (48h) 42.5 mg/L (Pandalus montagui)

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sulfuric acid	7664-93-9	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Sulfuric acid	7664-93-9	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
Sulfuric 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.

Contaminated Packaging Follow all applicable national or local regulations.

SECTION 14: Transport Information

IMDG/IMO

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

RID

UN Number: Not restricted
UN Proper Shipping Name: Not restricted

Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

ADR

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

IATA/ICAO

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

14.1. UN Number: Not restricted

14.2. UN Proper Shipping Name: Not restricted

14.3. Transport Hazard Class(es): Not applicable

14.4. Packing Group: Not applicable

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
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer

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/
OSHA
ECHA C&L

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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