HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

NITROGEN LIQUEFIED

Revision Date: 21-Sep-2015 **Revision Number:** 27

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

1.1. Product Identifier

Product Name NITROGEN LIQUEFIED
Internal ID Code HM001654

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

Recommended Use Fluid
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

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

Gases under pressure.	Refrigerated liquefied gas - H280

2.2. Label Elements

Hazard Pictograms

Signal Word **Warning**

Hazard Statements
H280 - Contains gas under pressure; may explode if heated

Precautionary Statements - EU (§28, 1272/2008)
P410 + P403 - Protect from sunlight. Store in a well-ventilated place

Contains

Substances	**CAS Number**
Nitrogen	7727-37-9

2.3. Other Hazards
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.1. Substances
Substance

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Nitrogen	231-783-9	7727-37-9	60 - 100%	Refrigerated Liquefied Gas Compressed Gas (H280)	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, 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 For exposure to liquid, immediately warm frostbite area with warm water (not to exceed 105 F or 41 C). In case of massive exposure, remove clothing while showering with warm water. Get medical attention.
Ingestion Get immediate medical attention.

4.2. Most Important symptoms and effects, both acute and delayed
May cause freeze burns. Reduces oxygen available for breathing.

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
All standard fire fighting media

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
Containers may explode (due to the build-up of pressure) when exposed to extreme heat

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. Ensure adequate ventilation.
See Section 8 for additional information

6.2. Environmental precautions
None known.

6.3. Methods and material for containment and cleaning up
Isolate spill and stop leak where safe.

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. 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 in a cool, dry location. 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
Nitrogen	7727-37-9	Not applicable	1000 ppm	1000 ppm	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Nitrogen	7727-37-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Nitrogen	7727-37-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Nitrogen	7727-37-9	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Nitrogen	7727-37-9	Not applicable	Not applicable	Not applicable	Not applicable

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.

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	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. In high concentrations, supplied air respirator or a self-contained breathing apparatus.
Hand Protection	Substantial leather work gloves.
Skin Protection	Normal work coveralls.
Eye Protection	None known.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

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 Remarks/ - Method	Values
pH:	No data available
Freezing Point/Range	-210 °C
Melting Point/Range	No data available
Boiling Point/Range	-195 °C / -319 °F
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	No data available
Vapor Pressure	608
Vapor Density	0.97
Specific Gravity	0.8
Water Solubility	Insoluble 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

Molecular Weight	28
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

None known.

10.6. Hazardous Decomposition Products

None known.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation Reduces oxygen available for breathing.

Eye Contact Contact with liquid causes frostbite.

Skin Contact Contact of material on skin may result in frostbite.

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.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitrogen	7727-37-9	No data available	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Nitrogen	7727-37-9	Contact with liquid causes frostbite.

Substances	CAS Number	Eye damage/irritation
Nitrogen	7727-37-9	Non-irritating to the eye

Substances	CAS Number	Skin Sensitization
Nitrogen	7727-37-9	No information available

Substances	CAS Number	Respiratory Sensitization
Nitrogen	7727-37-9	No information available

Substances	CAS Number	Mutagenic Effects
Nitrogen	7727-37-9	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Nitrogen	7727-37-9	No information available.

Substances	CAS Number	Reproductive toxicity
Nitrogen	7727-37-9	No information available

Substances	CAS Number	STOT - single exposure
Nitrogen	7727-37-9	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Nitrogen	7727-37-9	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Nitrogen	7727-37-9	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
Nitrogen	7727-37-9	No information available	No information available	No information available	No information available

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Nitrogen	7727-37-9	No information available

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Nitrogen	7727-37-9	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Nitrogen	7727-37-9	No information available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (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: UN1977
UN Proper Shipping Name: Nitrogen, Refrigerated Liquid
Transport Hazard Class(es): 2.2
Packing Group: Not applicable
Environmental Hazards: Not applicable

RID

UN Number: UN1977
UN Proper Shipping Name: Nitrogen, Refrigerated Liquid
Transport Hazard Class(es): 2.2
Packing Group: Not applicable
Environmental Hazards: Not applicable

ADR

UN Number: UN1977
UN Proper Shipping Name: Nitrogen, Refrigerated Liquid
Transport Hazard Class(es): 2.2
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number: UN1977
UN Proper Shipping Name: Nitrogen, Refrigerated Liquid
Transport Hazard Class(es): 2.2
Packing Group: Not applicable
Environmental Hazards: Not applicable

14.1. UN Number: UN1977

14.2. UN Proper Shipping Name: Nitrogen, Refrigerated Liquid

14.3. Transport Hazard Class(es): 2.2

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 0: Generally not water endangering.

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H281 - Contains refrigerated gas; may cause cryogenic burns or injury

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: 21-Sep-2015
Revision Note
SDS sections updated: 1

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

Disclaimer Statement
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet