HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

TORQ-TRIM® II

Revision Date: 24-Jul-2014 **Revision Number:** 19

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

1.1. Product Identifier

Product Name TORQ-TRIM® II

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

Recommended Use	Lubricant
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 Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
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

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Serious Eye Damage / Eye Irritation	Category 1 - H318
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H336
Flammable liquids.	Category 2 - H225

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
F - Highly Flammable.
Xi - Irritant.

Risk Phrases
R11 Highly flammable.
R41 Risk of serious damage to eyes.
R67 Vapours may cause drowsiness and dizziness.

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H225 - Highly flammable liquid and vapor
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P280 - Wear eye protection/face protection
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
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
P370 + P378 - In case of fire: Use water spray for extinction

Contains

Substances	**CAS Number**
Isopropanol	67-63-0
Diethanolamine	111-42-2

2.3. Other Hazards
None known

SECTION 3: Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Isopropanol	200-661-7	67-63-0	30 - 60%	F; R11 Xi; R36 R67	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	01-2119457558-25

Diethanolamine	203-868-0	111-42-2	5 - 10%	Xn; R22-48/22 Xi; R38-41 R53	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT RE 2 (H373) Aquatic Chronic 3 (H412)	No data available

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

3.1. Substances Not applicable
3.2. Mixtures Mixture

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get 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. 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 headache, dizziness, and other central nervous system effects.

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

Carbon dioxide, dry chemical, foam.

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

May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
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. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. 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. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 60 months.

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 OEL	Netherlands	France OEL
Isopropanol	67-63-0	Not applicable	STEL: 500 ppm STEL: 1250 mg/m³ TWA: 400 ppm TWA: 999 mg/m³	Not applicable	Not applicable
Diethanolamine	111-42-2	Not applicable	3 ppm	Not applicable	3 ppm

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Isopropanol	67-63-0	TWA: 200 ppm TWA: 500 mg/m³ MAK: 200 ppm MAK: 500 mg/m³	500 ppm VLA-EC; 1250 mg/m³ VLA-EC VLA-ED: 400 ppm VLA-ED: 998 mg/m³	STEL: 400 ppm TWA: 200 ppm	STEL: 250 ppm STEL: 620 mg/m³ TWA: 200 ppm TWA: 500 mg/m³
Diethanolamine	111-42-2	MAK: 1 mg/m³	VLA-ED: 0.46 ppm VLA-ED: 2 mg/m³	TWA: 2 mg/m³	TWA: 0.46 ppm TWA: 2 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Isopropanol	67-63-0	Not applicable	Not applicable	Not applicable	STEL: 150 ppm STEL: 306.25 mg/m³ TWA: 100 ppm TWA: 245 mg/m³
Diethanolamine	111-42-2	Not applicable	Not applicable	Not applicable	STEL: 6 ppm STEL: 22.5 mg/m³ TWA: 3 ppm TWA: 15 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Isopropanol	67-63-0	Not applicable	NDSCh: 1200 mg/m³ NDS: 900 mg/m³	TWA: 500 mg/m³ STEL: 2000 mg/m³	TWA: 500 mg/m³
Diethanolamine	111-42-2	Not applicable	NDS: 9 mg/m³	Not applicable	TWA: 5 mg/m³

Substances	CAS Number	Denmark
Isopropanol	67-63-0	TWA: 200 ppm TWA: 490 mg/m³
Diethanolamine	111-42-2	TWA: 0.46 ppm TWA: 2 mg/m³

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
Isopropanol	500 mg/m³	Not available	Not available	Not available	888 mg/kg bw/day	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
Isopropanol	89 mg/m³	Not available	Not available	Not available	319 mg/kg bw/day	Not available	Not available	Not available	26 mg/kg bw/day	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
Isopropanol	140.9 mg/L	140.9 mg/L	140.9 mg/L	2251 mg/L	552 mg/kg sediment dw	552 mg/kg sediment dw	Not available	28 mg/kg soil dw	160 mg/kg food

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 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.
Organic vapor respirator.
In high concentrations, supplied air respirator or a self-contained breathing apparatus.

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): Nitrile gloves. (>= 0.35 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 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

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid
Color: Amber
Odor: Alcohol
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	7-9 (1%1 IPA:3 H20)
Freezing Point/Range	-21 °C
Melting Point/Range	No data available
Boiling Point/Range	85 °C
Flash Point	18 °C PMCC
Evaporation rate	2.4
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.89
Water Solubility	Partly soluble
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 applicable
10.2. Chemical Stability
Stable
10.3. Possibility of Hazardous Reactions
Will Not Occur
10.4. Conditions to Avoid
Keep away from heat, sparks and flame.
10.5. Incompatible Materials
Strong oxidizers.
10.6. Hazardous Decomposition Products
Oxides of nitrogen. Hydrocarbons. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Eye Contact	May cause severe eye irritation.
Skin Contact	May cause skin irritation. May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause skin defatting with prolonged exposure.
Ingestion	May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.
Chronic Effects/Carcinogenicity	Prolonged or repeated exposure may cause liver, kidney and blood effects.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropanol	67-63-0	4396 mg/kg (Rat) 5840 mg/kg (Rat) 3600 mg/kg (Mouse)	12800 mg/kg (Rat) 12870 mg/kg (Rabbit) 16.4 mL/kg (Rabbit)	72.6 mg/L (Rat) 4h >10000 ppm (Rat) 6h
Diethanolamine	111-42-2	620 µL/kg (Rat) 1600 mg/kg (Rat)	7640 µL/kg (Rabbit) 13000 mg/kg (Rabbit)	LC0: 3.35 mg/L (Rat, vapour)

Substances	CAS Number	Skin corrosion/irritation
Isopropanol	67-63-0	Non-irritating to the skin (rabbit)
Diethanolamine	111-42-2	Causes moderate skin irritation. (rabbit)

Substances	CAS Number	Eye damage/irritation
Isopropanol	67-63-0	Causes severe eye irritation (rabbit)
Diethanolamine	111-42-2	Causes severe eye irritation (rabbit)

Substances	CAS Number	Skin Sensitization
Isopropanol	67-63-0	Did not cause sensitization on laboratory animals (guinea pig)
Diethanolamine	111-42-2	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Isopropanol	67-63-0	No information available
Diethanolamine	111-42-2	No information available

Substances	CAS Number	Mutagenic Effects
Isopropanol	67-63-0	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Diethanolamine	111-42-2	In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Isopropanol	67-63-0	Did not show carcinogenic effects in animal experiments (rat)
Diethanolamine	111-42-2	Not regarded as carcinogenic.

Substances	CAS Number	Reproductive toxicity
Isopropanol	67-63-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Diethanolamine	111-42-2	Animal testing did not show any effects on fertility. (similar substances) Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Isopropanol	67-63-0	May cause headache, dizziness, and other central nervous system effects.
Diethanolamine	111-42-2	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Isopropanol	67-63-0	No significant toxicity observed in animal studies at concentration requiring classification.
Diethanolamine	111-42-2	Causes damage to organs through prolonged or repeated exposure if swallowed (Liver) (Blood) (Kidney)

Substances	CAS Number	Aspiration hazard
Isopropanol	67-63-0	Not applicable
Diethanolamine	111-42-2	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
Isopropanol	67-63-0	EC50(72h): > 1000 mg/l(Desmodesmus subspicatus) EC50(7d): 1800 mg/L (mean extinction value) (Scenedesmus quadricauda)	LC50(96h): 9640 mg/l (Pimephales promelas) LC50(7d): 7060 mg/L (Poecilia reticulata)	TT(16h): 1050 mg/L (Pseudomonas putida)	EC50(48h): 13299 mg/l (Daphnia magna) EC50(24h): > 10000 mg/L (Daphnia magna)
Diethanolamine	111-42-2	EC50: 7.8 mg/L (Desmodesmus subspicatus) EC50(96h): 2.2 mg/L (growth rate) (Selenastrum capricornutum)	LC50: 4460-4980 mg/L (Pimephales promelas) LC50(96h): 1460 mg/L (Pimephales promelas)	EC20: >1000 mg/L (respiration rate) (activated sludge) EC90(30min) > 1000 mg/L (Activated sludge)	EC50(48h): 30.1 mg/L (Ceriodaphnia dubia) EC50(48h): 55 mg/L (Daphnia magna) NOEC(21d): 0.78 mg/L (Daphnia magna) (Reproduction)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Isopropanol	67-63-0	Readily biodegradable (53% @ 5d)
Diethanolamine	111-42-2	Readily biodegradable (88 - 97% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Isopropanol	67-63-0	0.05 @ 25°C
Diethanolamine	111-42-2	-1.71

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Isopropanol	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:** UN1219
- **UN Proper Shipping Name:** Isopropanol Solution
- **Transport Hazard Class(es):** 3
- **Packing Group:** II
- **Environmental Hazards:** Not applicable
- **EMS:** EmS F-E, S-D

RID
- **UN Number:** UN1219
- **UN Proper Shipping Name:** Isopropanol Solution
- **Transport Hazard Class(es):** 3
- **Packing Group:** II
- **Environmental hazard:** Not applicable

ADR
- **UN Number:** UN1219
- **UN Proper Shipping Name:** Isopropanol Solution
- **Transport Hazard Class(es):** 3
- **Packing Group:** II
- **Environmental hazard:** Not applicable

IATA/ICAO
- **UN Number:** UN1219
- **UN Proper Shipping Name:** Isopropanol Solution
- **Transport Hazard Class(es):** 3
- **Packing Group:** II
- **Environmental hazard:** Not applicable

14.1. UN Number: UN1219

14.2. UN Proper Shipping Name: Isopropanol Solution

14.3. Transport Hazard Class(es): 3

14.4. Packing Group: II

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 R-phrases referred to under Sections 2 and 3
R11 Highly flammable.
R22 Harmful if swallowed.
R36 - Irritating to eyes
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R67 Vapours may cause drowsiness and dizziness.
R53 May cause long-term adverse effects in the aquatic environment.

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

Revision Date: 24-Jul-2014
Revision Note
Update to Format SECTION: 8

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