HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

TORQ-TRIM® 22

Revision Date: 24-Jul-2014 **Revision Number:** 21

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

1.1. Product Identifier

Product Name TORQ-TRIM® 22

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

Recommended Use Lubricant

Sector of use Refer to the Annex for a listing of uses.

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

Acute Oral Toxicity	Category 4 - H302
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

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 T - Toxic.

Risk Phrases R22 Harmful if swallowed.
R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H302 - Harmful if swallowed
H372 - Causes damage to organs through prolonged or repeated exposure if swallowed

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P314 - Get medical attention/advice if you feel unwell

Contains

Substances	**CAS Number**
Ethylene glycol	107-21-1
Hexylene glycol	107-41-5

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.
Ethylene glycol	203-473-3	107-21-1	30 - 60%	Xn; R22 T; R48/25	Acute Tox. 4 (H302) STOT-RE 1 (H372)	01-2119456816-28
Hexylene glycol	203-489-0	107-41-5	10 - 30%	Not applicable	Not applicable	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, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists. 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 be harmful if swallowed.

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
None known.

5.2. Special hazards arising from the substance or mixture
Special Exposure Hazards
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. Spills of this product are very slippery.
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. 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.
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 container closed when not in use. Product has a shelf life of 36 months.

7.3. Specific End Use(s)
Exposure Scenario Please refer to the attached Annex for a listing of exposure scenarios.
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
Ethylene glycol	107-21-1	Not applicable	STEL: 40 ppm STEL: 104 mg/m³ STEL: 30 mg/m³ TWA: 20 ppm TWA: 52 mg/m³ TWA: 10 mg/m³	TWA: 52 mg/m³ TWA: 10 mg/m³ STEL: 104 mg/m³	20 ppm

Hexylene glycol	107-41-5	Not applicable	STEL: 25 ppm STEL: 123 mg/m³ TWA: 25 ppm TWA: 123 mg/m³	Not applicable	Not applicable

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m³ MAK: 10 ppm MAK: 26 mg/m³	40 ppm VLA-EC; 104 mg/m³ VLA-EC VLA-ED: 20 ppm VLA-ED: 52 mg/m³	Not applicable	STEL: 40 ppm STEL: 100 mg/m³ TWA: 20 ppm TWA: 50 mg/m³
Hexylene glycol	107-41-5	MAK: 10 ppm MAK: 49 mg/m³	25 ppm VLA-EC; 123 mg/m³ VLA-EC	Not applicable	STEL: 40 ppm STEL: 200 mg/m³ TWA: 25 ppm TWA: 120 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Ethylene glycol	107-21-1	Not applicable	Not applicable	Not applicable	STEL: 20 ppm TWA: 10 mg/m³
Hexylene glycol	107-41-5	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Ethylene glycol	107-21-1	STEL: 40 ppm STEL: 104 mg/m³ TWA: 20 ppm TWA: 52 mg/m³	NDSCh: 50 mg/m³ NDS: 15 mg/m³	TWA: 52 mg/m³ STEL: 104 mg/m³	TWA: 50 mg/m³
Hexylene glycol	107-41-5	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m³ TWA: 10 mg/m³
Hexylene glycol	107-41-5	Not applicable

Derived No Effect Level (DNEL)

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
Ethylene glycol	Not available	Not available	35 mg/m³	Not available	106 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
Ethylene glycol	Not available	Not available	7 mg/m³	Not available	53 mg/kg bw/day	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC)

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Ethylene glycol	10 mg/L	1 mg/L	10 mg/L	199.5 mg/L	37 mg/kg sediment dw	3.7 mg/kg sediment dw	Not available	1.53 mg/kg soil dw	Not 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. Organic vapor respirator with a dust/mist filter. (A2P2/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): 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:** Light straw
Odor: Mild **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	9.5	
Freezing Point/Range	< 0 °C	
Melting Point/Range	No data available	
Boiling Point/Range	> 100 °C	
Flash Point	> 100 °C PMCC	
Evaporation rate	No data available	
Vapor Pressure	< 1 mmHg	
Vapor Density	> 1	
Specific Gravity	1.07	
Water Solubility	Miscible with water	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	2.69	
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
None anticipated
10.5. Incompatible Materials
Strong oxidizers.
10.6. Hazardous Decomposition Products
Oxides of nitrogen. Phosphates. Hydrocarbons. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation Vapors given off by heated product may be harmful. 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 eye irritation

Skin Contact May cause skin irritation.

Ingestion Harmful if swallowed. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause liver and kidney damage.

Chronic Effects/Carcinogenicity Repeated overexposure may cause liver and kidney effects.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene glycol	107-21-1	4000 mg/kg (Rat) 7712 mg/kg (Rat) > 10000 mg/kg (Rat) 1670 mg/kg (Cat) 1400 – 1600 mg/kg (Human)	9530 µL/kg (Rabbit) > 3500 mg/kg (Mouse)	> 2.5 mg/L (Rat, 6h) (saturated concentration)
Hexylene glycol	107-41-5	3692 mg/kg (Rat) > 1,400 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat) 8560 µL/kg (Rabbit)	> the saturated vapour concentration at room temperature (Rat)

Substances	CAS Number	Skin corrosion/irritation
Ethylene glycol	107-21-1	Non-irritating to the skin (rabbit)
Hexylene glycol	107-41-5	Causes mild skin irritation (rabbit)

Substances	CAS Number	Eye damage/irritation
Ethylene glycol	107-21-1	Non-irritating to the eye (rabbit)
Hexylene glycol	107-41-5	Causes eye irritation (rabbit)

Substances	CAS Number	Skin Sensitization
Ethylene glycol	107-21-1	Did not cause sensitization on laboratory animals (guinea pig) Patch test on human volunteers did not demonstrate sensitization properties
Hexylene glycol	107-41-5	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Ethylene glycol	107-21-1	No information available
Hexylene glycol	107-41-5	No information available

Substances	CAS Number	Mutagenic Effects
Ethylene glycol	107-21-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Hexylene glycol	107-41-5	In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Ethylene glycol	107-21-1	Did not show carcinogenic effects in animal experiments
Hexylene glycol	107-41-5	No information available.

Substances	CAS Number	Reproductive toxicity

Ethylene glycol	107-21-1	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.
Hexylene glycol	107-41-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Ethylene glycol	107-21-1	No information available
Hexylene glycol	107-41-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Ethylene glycol	107-21-1	Causes damage to organs through prolonged or repeated exposure if swallowed (Kidney)
Hexylene glycol	107-41-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Ethylene glycol	107-21-1	Not applicable
Hexylene glycol	107-41-5	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
Ethylene glycol	107-21-1	EC50: 6500 - 13000 mg/L (Pseudokirchneriella subcapitata) TGK(8d): > 10000 mg/L (Scenedesmus quadricauda)	LC50: 41000 mg/L (Oncorhynchus mykiss) LC50(96h): 72860 mg/L (Pimephales promelas) NOEC(7d): 32000 mg/L (mortality) (Pimephales promelas)	TTC(16h): > 10000 mg/L (Pseudomonas putida) EC20(30 m): > 1995 mg/L (activated sludge, domestic) (similar substance – diethylene glycol)	EC50: 46300 mg/L (Daphnia magna) EC50(48h): >100 mg/L (Daphnia magna) NOEC(7d): 8590 mg/L (reproduction) (Ceriodaphnia dubia)
Hexylene glycol	107-41-5	EC50(72h): > 429 mg/L (Selenastrum capriconatum)	LC50(96h) 10500 - 11000 mg/L (Pimephales promelas) LC50(96h): 10000 mg/L (Lepomis macrochirus) LC50(96h) 8690 mg/L (Pimephales promelas) CL50(96h) 9450 mg/L (Oncorhynchus mykiss)	Inhibitory Concentration (10d): > 1000 mg/L (Pseudomonas aeruginosa)	EC50: 2700 - 3700 mg/L EC50(48h): 2800 mg/L (Ceriodaphnia reticulate)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Ethylene glycol	107-21-1	Readily biodegradable (100% @ 10d)
Hexylene glycol	107-41-5	Readily biodegradable (60 @ 14d)

12.3. Bioaccumulative potential
Does not bioaccumulate

Substances	CAS Number	Log Pow
Ethylene glycol	107-21-1	-1.36
Hexylene glycol	107-41-5	<0.14

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Ethylene glycol	Not PBT/vPvB

Hexylene glycol	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 hazard: Not applicable

ADR

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

Yes

SECTION 16: Other Information

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

R22 Harmful if swallowed.
R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.

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

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End of Safety Data Sheet