HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

GEM GPE™

Revision Date: 30-Jan-2015 **Revision Number:** 4

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

1.1. Product Identifier

Product Name GEM GPE™

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

Recommended Use Shale stabilizer

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

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**
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

Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373

Classification according to EU Directives 67/548/EEC or 1999/45/EC

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

Classification Xn - Harmful.

Risk Phrases

R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.

2.2. Label Elements

Hazard Pictograms

Signal Word **Warning**

Hazard Statements
H373 - May cause 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
P314 - Get medical attention/advice if you feel unwell
P501 - Dispose of contents/container to an approved incineration plant

Contains

Substances	CAS Number
Diethylene glycol	111-46-6
Ethylene glycol	107-21-1

2.3. Other Hazards
None known

SECTION 3: Composition/information on Ingredients

3.2. Mixtures
Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Diethylene glycol	203-872-2	111-46-6	5 - 10%	Xn; R22-48/22	Acute Tox. 4 (H302) STOT RE 2 (H373)	No data available
Ethylene glycol	203-473-3	107-21-1	1 - 5%	Xn; R22 T; R48/25	Acute Tox. 4 (H302) STOT-RE 1 (H372)	01-2119456816-28

For the full text of the R/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 to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Eyes Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin	Wash with soap and water. Get medical attention if irritation persists.
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. Prolonged or repeated exposure may cause kidney damage.

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.
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. Launder contaminated clothing before reuse. Wash hands after use. Avoid breathing mist.

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. Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 24 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	Netherlands	France

Diethylene glycol	111-46-6	Not applicable	TWA: 23 ppm TWA: 101 mg/m³ STEL: 69 ppm STEL: 303 mg/m³	Not applicable	Not applicable
Ethylene glycol	107-21-1	Not applicable	TWA: 10 mg/m³ TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³ STEL: 30 mg/m³	TWA: 52 mg/m³ TWA: 10 mg/m³ STEL: 104 mg/m³	20 ppm

Substances	**CAS Number**	**Germany**	**Spain**	**Portugal**	**Finland**
Diethylene glycol	111-46-6	TWA: 10 ppm TWA: 44 mg/m³	Not applicable	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m³	TWA: 20 ppm TWA: 52 mg/m³ 40 ppm STEL [VLA-EC]; 104 mg/m³ STEL [VLA-EC]	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³	TWA: 20 ppm TWA: 50 mg/m³ STEL: 40 ppm STEL: 100 mg/m³

Substances	**CAS Number**	**Austria**	**Ireland**	**Switzerland**	**Norway**
Diethylene glycol	111-46-6	TWA: 10 ppm TWA: 44 mg/m³ STEL" 40 ppm STEL" 176 mg/m³	23 ppm TWA; 100 mg/m³ TWA 69 ppm STEL (calculated); 300 mg/m³ STEL (calculated)	TWA: 10 ppm TWA: 44 mg/m³ STEL: 40 ppm STEL: 176 mg/m³	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m³ STEL" 20 ppm STEL" 52 mg/m³	10 mg/m³ TWA (particulate); 20 ppm TWA (vapour); 52 mg/m³ TWA (vapour) 40 ppm STEL; 104 mg/m³ STEL	TWA: 10 ppm TWA: 26 mg/m³ STEL: 20 ppm STEL: 52 mg/m³	TWA: 10 mg/m³ TWA: 20 ppm TWA: 52 mg/m³ STEL: 104 mg/m³ STEL: 40 ppm

Substances	**CAS Number**	**Italy**	**Poland**	**Hungary**	**Czech Republic**
Diethylene glycol	111-46-6	Not applicable	TWA: 10 mg/m³	Not applicable	Not applicable
Ethylene glycol	107-21-1	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³	TWA: 15 mg/m³ STEL: 50 mg/m³	TWA: 52 mg/m³ STEL: 104 mg/m³	TWA: 50 mg/m³

Substances	**CAS Number**	**Denmark**	**Romania**	**Croatia**	**Cyprus**
Diethylene glycol	111-46-6	TWA: 2.5 ppm TWA: 11 mg/m³	TWA: 115 ppm TWA: 500 mg/m³ STEL: 184 ppm STEL: 800 mg/m³	TWA: 23 ppm TWA: 101 mg/m³	Not applicable
Ethylene glycol	107-21-1	TWA: 10 ppm TWA: 26 mg/m³ TWA: 10 mg/m³	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 mg/m³	TWA: 20 ppm TWA: 52 mg/m³ STEL: 40 ppm STEL: 104 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
Diethylene glycol	Not available	Not available	60 mg/m³	Not available	106 mg/kg bw/day	Not available	Not available	Not available	Not available
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
Diethylene glycol	Not available	Not available	12 mg/m³	Not available	53 mg/kg bw/day	Not available	Not available	Not available	Not available	Not available	Not available
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) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Diethylene glycol	10 mg/L	1 mg/L	10 mg/L	199.5 mg/L	20.9 mg/kg sediment dw	2.09 mg/kg sediment dw	Not available	1.53 mg/kg soil dw	No potential for bioaccumulation
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. 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.
Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor cartridge with particulate prefilter.

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. (>= 0.4 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 Normal work coveralls.

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: Dark Yellow to brown
Odor: Characteristic
Odor Threshold: No information available

Property	Values	Remarks/ - Method
pH:	7.5 - 9.0 (50%)	
Freezing Point/Range	No data available	
Melting Point/Range	No data available	
Boiling Point/Range	200 °C	
Flash Point	> 93 °C PMCC	

Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.08 - 1.18
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 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. Strong acids.

10.6. Hazardous Decomposition Products

Hydrocarbons. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation Heated vapors 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 mild eye irritation.

Skin Contact May cause mild skin irritation.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea. 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 heart, kidney and brain disorders.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol	111-46-6	12565 - 19600 mg/kg (Rat)	11890 - 13300 mg/kg (Rabbit)	> 4.6 mg/L (Rat) 4h
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)

Substances	CAS Number	Skin corrosion/irritation
Diethylene glycol	111-46-6	Non-irritating to the skin (rabbit)
Ethylene glycol	107-21-1	Non-irritating to the skin (rabbit)

Substances	CAS Number	Eye damage/irritation
Diethylene glycol	111-46-6	Non-irritating to the eye (rabbit)

Ethylene glycol	107-21-1	Non-irritating to the eye (rabbit)

Substances	CAS Number	Skin Sensitization
Diethylene glycol	111-46-6	Did not cause sensitization on laboratory animals (guinea pig)
Ethylene glycol	107-21-1	Did not cause sensitization on laboratory animals (guinea pig) Patch test on human volunteers did not demonstrate sensitization properties

Substances	CAS Number	Respiratory Sensitization
Diethylene glycol	111-46-6	No information available
Ethylene glycol	107-21-1	No information available

Substances	CAS Number	Mutagenic Effects
Diethylene glycol	111-46-6	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Ethylene glycol	107-21-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Diethylene glycol	111-46-6	Did not show carcinogenic effects in animal experiments (rat)
Ethylene glycol	107-21-1	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
Diethylene glycol	111-46-6	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Ethylene glycol	107-21-1	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.

Substances	CAS Number	STOT - single exposure
Diethylene glycol	111-46-6	No significant toxicity observed in animal studies at concentration requiring classification.
Ethylene glycol	107-21-1	No information available

Substances	CAS Number	STOT - repeated exposure
Diethylene glycol	111-46-6	Causes damage to organs through prolonged or repeated exposure (Kidney)
Ethylene glycol	107-21-1	Causes damage to organs through prolonged or repeated exposure if swallowed (Kidney)

Substances	CAS Number	Aspiration hazard
Diethylene glycol	111-46-6	Not applicable
Ethylene glycol	107-21-1	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
Diethylene glycol	111-46-6	TGK(8d): 2700 mg/L (Scenedesmus quadricauda)	LC50: 75200 mg/L (Pimephales promelas)	EC20(30m): > 1995 mg/L (domestic activated sludge)	EC50: 84000 mg/L (Daphnia magna) EC50: >10000 mg/L (Daphnia magna)
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)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Diethylene glycol	111-46-6	Readily biodegradable (90-100% @ 28d)
Ethylene glycol	107-21-1	Readily biodegradable (100% @ 10d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Diethylene glycol	111-46-6	BCF: 100 (Leuciscus idus melanotus)
Ethylene glycol	107-21-1	-1.36

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

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
No information available

SECTION 16: Other Information

Full text of R-phrases referred to under Sections 2 and 3
R22 Harmful if swallowed.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H372 - Causes damage to organs through prolonged or repeated exposure if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure if swallowed

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/

Revision Date: 30-Jan-2015
Revision Note
Update to Format SECTION: 8

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

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End of Safety Data Sheet