

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

DYE MARKER E+

Revision Date: 20-Dec-2012

Revision Number: 9

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name DYE MARKER E+

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

Recommended Use Dye

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
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

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Not classified

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 Not Classified
Risk Phrases None

2.2 Label Elements

Not classified

Hazard Pictograms**Signal Word**

None

Hazard Statements

Not Classified

Precautionary Statements - EU (§28, 1272/2008)

Not Classified

Contains**Substances**

Titanium dioxide
Zirconium oxide
Silica, amorphous
Aluminum hydroxide

CAS Number

13463-67-7
1314-23-4
7631-86-9
21645-51-2

2.3 Other Hazards

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Titanium dioxide	236-675-5	13463-67-7	60 - 100%	Not applicable	Not applicable	No data available
Zirconium oxide	215-227-2	1314-23-4	1 - 5%	Not applicable	Not applicable	No data available
Silica, amorphous	231-545-4	7631-86-9	5 - 10%	Not applicable	Not applicable	No data available
Aluminum hydroxide	244-492-7	21645-51-2	1 - 5%	Not applicable	Not applicable	No data available

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

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, 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.

Ingestion

Under normal conditions, first aid procedures are not required.

4.2 Most Important symptoms and effects, both acute and delayed

No information available

4.3 Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable Extinguishing Media**

None - does not burn.

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**

Not applicable.

5.3 Advice for firefighters**Special Protective Equipment for Fire-Fighters**

Not applicable.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 8 for additional information

6.2 Environmental precautions

None known.

6.3 Methods and material for containment and cleaning up

Scoop up and remove.

6.4 Reference to other sections

See Section 8 and 13 for additional information.

7. HANDLING AND STORAGE**7.1 Precautions for Safe Handling**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

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.

7.3 Specific End Use(s)**Exposure Scenario**

No information available

Other Guidelines

No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Exposure Limits**

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Titanium dioxide	13463-67-7	Not applicable	STEL: 30 mg/m ³ STEL: 12 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³	10 mg/m ³	10 mg/m ³
Zirconium oxide	1314-23-4	Not applicable	5 mg/m ³	5 mg/m ³	Not applicable
Silica, amorphous	7631-86-9	Not applicable	STEL: 18 mg/m ³ STEL: 7.2 mg/m ³ TWA: 6 mg/m ³ TWA: 2.4 mg/m ³	Not applicable	Not applicable
Aluminum hydroxide	21645-51-2	Not applicable	10 mg/M3	10 mg/M3	Not applicable

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Titanium dioxide	13463-67-7	6 mg/m ³	VLA-ED: 10 mg/m ³	TWA: 10 mg/m ³	Not applicable
Zirconium oxide	1314-23-4	5 mg/m ³	10 mg/m ³ VLA-EC (as Zr) VLA-ED: 5 mg/m ³	STEL: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 1 mg/m ³
Silica, amorphous	7631-86-9	TWA: 4 mg/m ³ MAK: 4 mg/m ³	Not applicable	Not applicable	Not applicable
Aluminum hydroxide	21645-51-2	MAK: 4 mg/m ³ MAK: 1.5 mg/m ³	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Titanium dioxide	13463-67-7	Not applicable	Not applicable	Not applicable	STEL: 10 mg/m ³ TWA: 5 mg/m ³
Zirconium oxide	1314-23-4	Not applicable	Not applicable	Not applicable	STEL: 10 mg/m ³ TWA: 5 mg/m ³
Silica, amorphous	7631-86-9	Not applicable	Not applicable	Not applicable	STEL: 3 mg/m ³ TWA: 1.5 mg/m ³
Aluminum hydroxide	21645-51-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Titanium dioxide	13463-67-7	Not applicable	NDSch: 30 mg/m ³ NDS: 10.0 mg/m ³	Not applicable	Not applicable
Zirconium oxide	1314-23-4	Not applicable	5 mg/m ³	5 mg/m ³	Not applicable
Silica, amorphous	7631-86-9	Not applicable	Not applicable	Not applicable	TWA: 0.1 mg/m ³ TWA: 4.0 mg/m ³
Aluminum hydroxide	21645-51-2	Not applicable	NDS: 2.5 mg/m ³ NDS: 1.2 mg/m ³	Not applicable	TWA: 10.0 mg/m ³

Substances	CAS Number	Denmark
Titanium dioxide	13463-67-7	TWA: 6 mg/m ³
Zirconium oxide	1314-23-4	5 mg/m ³
Silica, amorphous	7631-86-9	Not applicable
Aluminum hydroxide	21645-51-2	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**Respiratory Protection**

Dust/mist respirator. (N95, P2/P3)

Hand Protection

Normal work gloves.

Skin Protection

Normal work coveralls.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

Other Precautions

None known.

Environmental Exposure Controls

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties**Physical State:** Solid**Color:** White**Odor:** Odorless**Odor Threshold:** No information available**Property****Values**

Remarks/ - Method

pH:

7-8

Freezing Point/Range

No data available

Melting Point/Range

No data available

Boiling Point/Range

No data available

Flash Point

No data available

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

No data available

Water Solubility

No data available

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

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

None known.

10.6 Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION**11.1 Information on Toxicological Effects****Acute Toxicity****Inhalation**

May cause respiratory irritation.

Eye Contact

May cause eye irritation.

Skin Contact

Prolonged or repeated contact may cause slight skin irritation.

Ingestion

None known

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Titanium dioxide	13463-67-7	10000 mg/kg (Rat)	No data available	No data available
Zirconium oxide	1314-23-4	No data available	No data available	No data available
Silica, amorphous	7631-86-9	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	2.2 mg/L (Rat) 1 h
Aluminum hydroxide	21645-51-2	5000 mg/kg (Rat)	No data available	No data available

12. ECOLOGICAL INFORMATION**12.1 Toxicity****Ecotoxicity Effects**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Titanium dioxide	13463-67-7	No information available	No information available	No information available	No information available
Zirconium oxide	1314-23-4	No information available	No information available	No information available	No information available
Silica, amorphous	7631-86-9	EC50: 440 mg/L (Pseudokirchneriella subcapitata)	LC50: 5000 mg/L (Brachydanio rerio); LC50: 45.4 mg/L (Oncorhynchus mykiss)	No information available	EC50: 7600 mg/L (Ceriodaphnia dubia) EC50: 40.38 mg/L (Ceriodaphnia dubia)
Aluminum hydroxide	21645-51-2	No information available	No information available	No information available	No information available

12.2 Persistence and degradability

No information available

12.3 Bioaccumulative potential

No information available

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal Method

Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

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

Special Precautions for User None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:.

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

16. OTHER INFORMATION

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

None

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 20-Dec-2012

Revision Note

Not applicable

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