



## SAFETY DATA SHEET

### Diluted Breaker Solution

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

##### 1.1. Product identifier

Product name Diluted Breaker Solution

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

Identified uses Breaker for Isolation Barrier System (IBS Product) Uses advised against No specific uses advised against are identified.

##### 1.3. Details of the supplier of the safety data sheet

Supplier KCI Energy Services Ltd  
Units 6 & 7  
1 Kirkhill Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen  
AB21 0GU  
UK  
+44 (0) 1224 255480  
<http://www.kcilt.co.uk/>  
[info@kcilt.co.uk](mailto:info@kcilt.co.uk)

Contact person Roy MacKenzie

##### 1.4. Emergency telephone number

Emergency telephone +44 (0) 1224 255480 (office hours only) +44 (0) 7876 656870 (office hours only)

National emergency telephone NHS: 111 (Members of the public)

number UK National Poisons Information Service: 0844 892 0111 (Health Professionals Only)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification

Physical hazards Not Classified

## Diluted Breaker Solution

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT RE 2 - H373

Environmental hazards Not Classified

### 2.2. Label elements

Pictogram



Signal word

Danger

Hazard statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe vapour/spray.

P264 Wash contaminated skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

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/doctor.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment (see medical advice on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P501 Dispose of contents/container in accordance with national regulations.

Contains

sodium periodate

### 2.3. Other hazards

#### SECTION 3: Composition/information on ingredients

##### 3.2. Mixtures

sodium periodate			1- 5%
CAS number: 7790-28-5	EC number: 232-197-6	REACH registration number:	
M factor (Acute) = 1		012119980983-20-0000	
Classification			
Ox. Sol. 1 - H271			
Skin Corr. 1C - H314			
Eye Dam. 1 - H318			
STOT RE 1 - H372			
Aquatic Acute 1 - H400			

The full text for all hazard statements is displayed in Section 16.

## Diluted Breaker Solution

Composition comments REACH Registration number provided is a supplier's registration number.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

General information	Get medical attention immediately.
Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical attention if any discomfort continues. Keep affected person warm and at rest. If throat irritation or coughing persists, proceed as follows. Get medical attention. Unlikely route of exposure as the product does not contain volatile substances.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Remove affected person from source of contamination. Get medical attention immediately. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist after washing.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

#### 4.2. Most important symptoms and effects, both acute and delayed

General information	Treat symptomatically.
Inhalation	This is unlikely to occur but symptoms similar to those of ingestion may develop.
Ingestion	This product is corrosive.
Skin contact	Corrosive to skin and eyes.
Eye contact	Corrosive to skin and eyes. Causes serious eye damage.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	Water spray. Powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.

#### 5.2. Special hazards arising from the substance or mixture

## Diluted Breaker Solution

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Specific hazards                      Not applicable.

### 5.3. Advice for firefighters

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Protective actions during firefighting      Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Avoid breathing fire gases or vapours. Fight fire with normal precautions from a reasonable distance.

Special protective equipment              Use protective equipment appropriate for surrounding materials. for firefighters

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

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Personal precautions                      Wear protective gloves, eye and face protection. No smoking, sparks, flames or other sources of ignition near spillage.

### 6.2. Environmental precautions

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Environmental precautions              The product is not expected to be toxic to aquatic organisms.

### 6.3. Methods and material for containment and cleaning up

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Methods for cleaning up                      Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Avoid spreading dust or contaminated materials.

### 6.4. Reference to other sections

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Reference to other sections              For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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Usage precautions                      Container must be kept tightly closed when not in use.

Advice on general occupational hygiene              Eye wash facilities and emergency shower must be available when handling this product. Good personal hygiene procedures should be implemented. Wash promptly if skin becomes contaminated. Take off immediately all contaminated clothing and wash it before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

## Diluted Breaker Solution

Storage precautions Store in tightly-closed, original container in a dry and cool place.

### 7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

sodium periodate

This substance does not have an established exposure limit value.

#### sodium periodate (CAS: 7790-28-5)

DNEL	Workers - Inhalation; Long term systemic effects: 0.1 mg/m <sup>3</sup>
	Workers - Inhalation; Short term systemic effects: 0.3 mg/m <sup>3</sup>
	Workers - Dermal; Long term systemic effects: 0.06 mg/kg bw/day
	Workers - Dermal; Short term systemic effects: 0.2 mg/kg bw/day
	General population - Inhalation; Long term systemic effects: 0.03 mg/m <sup>3</sup>
	General population - Inhalation; Short term systemic effects: 0.09 mg/m <sup>3</sup>
	General population - Dermal; Long term systemic effects: 0.03 mg/kg bw/day
	General population - Dermal; Short term systemic effects: 0.09 mg/kg bw/day
	General population - Oral; Long term local effects: 0.03 mg/kg bw/day
	General population - Oral; Long term systemic effects: 0.01 mg/kg bw/day
DMEL	
PNEC	PNEC - Fresh water; 0.00018 mg/l
	PNEC - Marine water; 0.000018 mg/l
	PNEC - Water , Intermittent release; 0.0018 mg/l
	PNEC - STP; 2.2 mg/l
	PNEC - Sediment (Freshwater); 0.000702 mg/kg sediment dw
	PNEC - Sediment (Marinewater); 0.0000702 mg/kg sediment dw
	- Soil; 0.000035 mg/kg soil dw

### 8.2. Exposure controls

#### Protective equipment



Appropriate engineering controls Provide adequate general and local exhaust ventilation. Provide eyewash station and safety shower.

Eye/face protection Wear tight-fitting, chemical splash goggles or face shield.

Hand protection Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

## Diluted Breaker Solution

Other skin and body protection	Wear apron or protective clothing in case of contact. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.
Hygiene measures	Good personal hygiene procedures should be implemented. Wash skin thoroughly after handling.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible.
Environmental exposure controls	Keep container tightly sealed when not in use.

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Clear.
Odour	Odourless.
Initial boiling point and range	Scientifically unjustified. (sodium periodate) REACH dossier information.
Flash point	Scientifically unjustified. (sodium periodate) REACH dossier information.
Upper/lower flammability or explosive limits	The product is not flammable.
Vapour pressure	Scientifically unjustified. (sodium periodate) REACH dossier information.
Relative density	3.865 @ 16°C
Solubility(ies)	Very soluble in the following materials: 8.0 - 9.3 % w/w water @ 20°C
Decomposition Temperature	ca. 270°C (sodium periodate) REACH dossier information.
Viscosity	Technically not feasible. (sodium periodate) REACH dossier information.
Explosive properties	Scientifically unjustified. (sodium periodate) REACH dossier information.
Oxidising properties	Does not meet the criteria for classification as oxidising.

#### 9.2. Other information

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

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Reactivity                      There are no known reactivity hazards associated with this product.

#### 10.2. Chemical stability

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Stability                      Stable at normal ambient temperatures and when used as recommended. Will decompose at temperatures exceeding 140°C.

#### 10.3. Possibility of hazardous reactions

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Possibility of hazardous                      No potentially hazardous reactions known.

## Diluted Breaker Solution

reactions

### 10.4. Conditions to avoid

Conditions to avoid                      Avoid contact with acids. Reducing agents.

### 10.5. Incompatible materials

Materials to avoid                      Flammable/combustible materials. Strong acids. Strong reducing agents. Powdered metal.

### 10.6. Hazardous decomposition products

Hazardous decomposition    Iodine products

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Skin corrosion/irritation

Animal data                              Irritating.

#### Serious eye damage/irritation

Serious eye damage/irritation    Corrosivity to eyes is assumed.

#### Specific target organ toxicity - repeated exposure

STOT - repeated exposure        Causes damage to organs (Glands) through prolonged or repeated exposure.

#### Toxicological information on ingredients. sodium periodate

Toxicological effects                The toxicity of this substance has been assessed during REACH registration.

Acute toxicity - oral  
Notes (oral LD<sub>50</sub>)                      Scientifically unjustified.

Acute toxicity - dermal  
Notes (dermal LD<sub>50</sub>)                      Scientifically unjustified.

Acute toxicity - inhalation  
Notes (inhalation LC<sub>50</sub>)                      Scientifically unjustified.

Skin corrosion/irritation  
Animal data                              Highly corrosive.

Serious eye damage/irritation  
Serious eye damage/irritation        Corrosive to skin. Corrosivity to eyes is assumed.

Respiratory sensitisation  
Respiratory sensitisation              No specific test data are available.

Skin sensitisation  
Skin sensitisation                        Scientifically unjustified.

#### Germ cell mutagenicity

## Diluted Breaker Solution

Genotoxicity - in vitro      Negative.

Genotoxicity - in vivo      Negative.

### Carcinogenicity

Carcinogenicity              Scientifically unjustified.

### Reproductive toxicity

Reproductive toxicity - Conclusive data but not sufficient for classification. fertility

Reproductive toxicity - Conclusive data but not sufficient for classification. development

### Specific target organ toxicity - single exposure

STOT - single exposure      No specific test data are available.

### Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 3 mg/l, Oral, Rat NOAEL 90 mg/kg/day, Oral, Rat

Target organs                 Glands

### Aspiration hazard

Aspiration hazard             Data lacking.

## SECTION 12: Ecological Information

Ecotoxicity            The product contains a substance which is very toxic to aquatic organisms. The product is not expected to be hazardous to the environment. Ecological information on ingredients.

### sodium periodate

Ecotoxicity                 Very toxic to aquatic life.

### 12.1. Toxicity

#### Ecological information on ingredients.

### sodium periodate

#### Acute aquatic toxicity

LE(C)<sub>50</sub>                        0.1 < L(E)C<sub>50</sub> ≤ 1

M factor (Acute)            1

Acute toxicity - fish        LC<sub>50</sub>, 96 hour: > 0.17 mg/l, Onchorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates            EC<sub>50</sub>, 48 hour: 0.18 mg/l, Daphnia magna

Acute toxicity - aquatic plants                        EC<sub>50</sub>, 72 hour: 1.1 mg/l, Phaeodactylum tricornutum

Acute toxicity microorganisms            EC<sub>50</sub>, 3 hour: 220 mg/l, Activated sludge

### 12.2. Persistence and degradability

#### Ecological information on ingredients.



## Diluted Breaker Solution

### sodium periodate

Biodegradation                      Not applicable.  
    Substance is inorganic.

#### 12.3. Bioaccumulative potential

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Bioaccumulative potential        The product does not contain any substances expected to be bioaccumulating.

#### Ecological information on ingredients. sodium periodate

Partition coefficient                Scientifically unjustified.

#### 12.4. Mobility in soil

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Adsorption/desorption        sodium periodate (EC 232-197-6, CAS 7790-28-5): No information available. coefficient

#### Ecological information on ingredients. sodium periodate

Adsorption/desorption        Scientifically unjustified.  
 coefficient

#### 12.5. Results of PBT and vPvB assessment

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Results of PBT and vPvB        This product does not contain any substances classified as PBT or vPvB. assessment

#### Ecological information on ingredients. sodium periodate

Results of PBT and vPvB        This product does not contain any substances classified as PBT or vPvB.  
 assessment

#### 12.6. Other adverse effects

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

General information                Waste is classified as hazardous waste. Dispose of waste product or used containers in  
 accordance with local regulations

Disposal methods                    Waste, residues, empty containers, discarded work clothes and contaminated cleaning  
 materials should be collected in designated containers, labelled with their contents. Dispose  
 of waste via a licensed waste disposal contractor.

### SECTION 14: Transport information

General                                The product is not covered by international regulations on the transport of dangerous goods  
 (IMDG, IATA, ADR/RID).

#### 14.1. UN number

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Not applicable.

#### 14.2. UN proper shipping name

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## Diluted Breaker Solution

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Not applicable.

14.3. Transport hazard class(es)

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No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

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Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

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Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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Transport in bulk according to      Not  
applicable. Annex II of MARPOL 73/78 and  
the IBC Code

### SECTION 15: Regulatory information

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

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EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).  Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
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15.2. Chemical safety assessment

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No chemical safety assessment has been carried out.

### SECTION 16: Other information

General information	The data contained herein does not constitute the user's own assessment or workplace risk as required by other health and safety legislation (e.g. COSHH 1988). The data does not signify any warranty with regard to the product's properties.
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Revision date	08/07/2015
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## Diluted Breaker Solution

Revision	1
Supersedes date	01/04/2014
SDS number	4619
Hazard statements in full	H271 May cause fire or explosion; strong oxidiser. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318 Causes serious eye damage. H372 Causes damage to organs through prolonged or repeated exposure. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life.