

**SAFETY DATA SHEET****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

<b>Product name</b>	<b>Clair Crude Oil</b>
<b>Proper shipping name</b>	MARPOL Annex 1 rules apply for bulk shipments by sea. Category: Crude oil
<b>SDS no.</b>	SEP2208
<b>EC number</b>	232-298-5
<b>CAS number</b>	8002-05-9
<b>Product type</b>	Liquid.

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

<b>Use of the substance/ mixture</b>	Refinery feedstock For specific application advice see appropriate Technical Data Sheet or consult our company representative.
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**1.3 Details of the supplier of the safety data sheet**

<b>Supplier</b>	BP Exploration Operating Company Ltd 1 Wellheads Avenue Dyce Aberdeen AB21 7PB United Kingdom
<b>E-mail address</b>	NorthSeaRegionChemicalSafetyDatasheets@bp.com MSDSadvice@bp.com

**1.4 Emergency telephone number**

<b>EMERGENCY TELEPHONE NUMBER</b>	Carechem: +44 (0) 1235 239 670 (24 hours)
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**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

**Product definition** UVCB

**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Flam. Liq. 1, H224  
Eye Irrit. 2, H319  
Carc. 1B, H350  
STOT SE 3, H336 (Narcotic effects)  
STOT RE 2, H373  
Asp. Tox. 1, H304  
Aquatic Chronic 2, H411

**Classification according to Directive 67/548/EEC [DSD]**

F+; R12  
Carc. Cat. 1; R45  
Muta. Cat. 2; R46  
T; R23  
Xn; R48/20/21/22, R65  
R66  
R52/53

See Section 16 for the full text of the R phrases or H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

**2.2 Label elements****Hazard pictograms**

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 1/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

**SECTION 2: Hazards identification**

<b>Signal word</b>	Danger
<b>Hazard statements</b>	H224 - Extremely flammable liquid and vapour. H319 - Causes serious eye irritation. H350 - May cause cancer. H304 - May be fatal if swallowed and enters airways. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. H411 - Toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	
<b>Prevention</b>	P201 - Obtain special instructions before use. P280 - Wear protective gloves: > 8 hours (breakthrough time): Viton®. Wear eye or face protection: Recommended: splash goggles. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment. P260 - Do not breathe vapour.
<b>Response</b>	P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
<b>Storage</b>	P235 - Keep cool.
<b>Disposal</b>	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	Repeated exposure may cause skin dryness or cracking.
<b>Special packaging requirements</b>	
<b>Containers to be fitted with child-resistant fastenings</b>	Not applicable.
<b>Tactile warning of danger</b>	Not applicable.

**2.3 Other hazards**

<b>Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII</b>	No
<b>Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	No
<b>Other hazards which do not result in classification</b>	Prolonged or repeated contact may dry skin and cause irritation. This material can contain hydrogen sulphide (H <sub>2</sub> S), a very toxic and extremely flammable gas. This material may contain significant quantities of polycyclic aromatic hydrocarbons (PCAs), some of which have been shown by experimental studies to induce skin cancer. Contains Benzene. Prolonged or repeated exposure to benzene can cause anaemia and other blood diseases, including leukaemia.  The classification of this UVCB is as per the recommendations in CONCAWE report number 8/12 ("Hazard classification and labelling of petroleum substances in the European Economic Area – 2012"). These recommendations were made as a result of studies conducted on a number of representative samples of crude oils.

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

**Substance/mixture** UVCB  
Crude Oil: complex hydrocarbon mixture comprising mainly of aliphatic, naphthenic and aromatic hydrocarbons.

Classification

Product/ingredient name	Identifiers	%	67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	Type
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<b>Product name</b> Clair Crude Oil	<b>Product code</b> SEP2208	<b>Page:</b> 2/15
<b>Version</b> 1	<b>Date of issue</b> 3 July 2014	<b>Format</b> United Kingdom (UK) (United Kingdom)
		<b>Language</b> ENGLISH

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

Crude oil	EC: 232-298-5 CAS: 8002-05-9	100	F+; R12 Carc. Cat. 1; R45 Muta. Cat. 2; R46 T; R23 Xn; R48/20/21/22, R65 R66 R52/53	Flam. Liq. 1, H224 Eye Irrit. 2, H319 Carc. 1B, H350 STOT SE 3, H336 (Narcotic effects) STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[*]
ethylbenzene	EC: 202-849-4 CAS: 100-41-4	<5	F; R11 Xn; R20	Flam. Liq. 2, H225 Acute Tox. 4, H332 Asp. Tox. 1, H304	[B]
n-hexane	EC: 203-777-6 CAS: 110-54-3	<3	F; R11 Repr. Cat. 3; R62 Xn; R48/20, R65 Xi; R38 R67 N; R51/53	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f (Fertility) STOT SE 3, H336 (Narcotic effects) STOT RE 2, H373 (peripheral nervous system) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[B]
Benzene	EC: 200-753-7 CAS: 71-43-2	0 - 2	F; R11 Carc. Cat. 1; R45 Muta. Cat. 2; R46 T; R48/23/24/25 Xn; R65 Xi; R36/38	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 (blood system) Asp. Tox. 1, H304	[B]
Hydrogen Sulphide	EC: 231-977-3 CAS: 7783-06-4 Index: 016-001-00-4	<1	F+; R12 T+; R26 N; R50	Flam. Gas 1, H220 Press. Gas, H280 Acute Tox. 2, H330 Aquatic Acute 1, H400	[B]

See Section 16 for the full text of the R-phrases declared above.

See Section 16 for the full text of the H statements declared above.

Type

[\*] Substance

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

**SECTION 4: First aid measures**

4.1 Description of first aid measures

**Eye contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

**Skin contact**

Wash skin thoroughly with soap and water or use recognised skin cleanser. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Product can be removed from the skin using warmed medicinal paraffin. Never use gasoline or kerosine to remove product from skin or clothing.

**Inhalation**

If inhaled, remove to fresh air. Get medical attention immediately.

**EXPOSURE TO HYDROGEN SULPHIDE (H2S):**  
Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be immediately removed to fresh air and medical assistance obtained without delay. If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice. Unconscious casualties must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed, or is deemed

Product name Clair Crude Oil

Product code SEP2208

Page: 3/15

Version 1 Date of issue 3 July 2014

Format United Kingdom (UK) (United Kingdom)

Language ENGLISH

## SECTION 4: First aid measures

	inadequate, respiration must be assisted, preferably by the mouth to mouth method. Administer external cardiac massage if necessary. Seek medical attention immediately.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

See Section 11 for more detailed information on health effects and symptoms.

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

<b>Notes to physician</b>	Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias. Inhalation of hydrogen sulphide may cause central respiratory depression leading to coma and death. It is irritant to the respiratory tract causing chemical pneumonitis and pulmonary oedema. The onset of pulmonary oedema may be delayed for 24 to 48 hours. Treat with oxygen and ventilate as appropriate. Administer broncho-dilators if indicated and consider administration of corticosteroids. Keep casualty under surveillance for 48 hours in case pulmonary oedema develops.
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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet.

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

<b>Hazards from the substance or mixture</b>	Extremely flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
<b>Hazardous combustion products</b>	Combustion products may include the following: carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide) sulphur oxides (SO, SO <sub>2</sub> , etc.) nitrogen oxides (NO, NO <sub>2</sub> etc.) other hazardous substances.

### 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 4/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Eliminate all ignition sources. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

This material can contain hydrogen sulphide (H<sub>2</sub>S), a very toxic and extremely flammable gas. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained positive pressure breathing apparatus (SCBA).

#### For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and materials for containment and cleaning up

#### Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

#### Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

### 6.4 Reference to other sections

See Section 1 for emergency contact information.  
See Section 5 for firefighting measures.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 12 for environmental precautions.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Protective measures

Put on appropriate personal protective equipment. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Aspiration hazard Can enter lungs and cause damage. Never siphon by mouth. Avoid contact of spilt material and runoff with soil and surface waterways. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Do not reuse container. Empty containers retain product residue and can be hazardous.

#### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 5/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

**SECTION 7: Handling and storage**

**7.2 Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep away from heat and direct sunlight. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

This material can contain hydrogen sulphide (H<sub>2</sub>S), a very toxic and extremely flammable gas. Vapours containing hydrogen sulphide may accumulate during storage or transport and may also be vented during filling of tanks. Hydrogen sulphide has a typical "bad egg" smell but at high concentrations the sense of smell is rapidly lost, therefore do not rely on sense of smell for detecting hydrogen sulphide. Use specially designed measuring instruments for determining its concentration.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

**7.3 Specific end use(s)**

**Recommendations**

See section 1.2 and Exposure scenarios in annex, if applicable.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Occupational exposure limits**

Product/ingredient name	Exposure limit values
ethylbenzene	<b>EH40/2005 WELs (United Kingdom (UK)). Absorbed through skin.</b> STEL: 552 mg/m <sup>3</sup> 15 minutes. Issued/Revised: 12/2001 STEL: 125 ppm 15 minutes. Issued/Revised: 12/2001 TWA: 441 mg/m <sup>3</sup> 8 hours. Issued/Revised: 12/2001 TWA: 100 ppm 8 hours. Issued/Revised: 12/2001
n-hexane	<b>EH40/2005 WELs (United Kingdom (UK)).</b> TWA: 72 mg/m <sup>3</sup> 8 hours. Issued/Revised: 1/1997 TWA: 20 ppm 8 hours. Issued/Revised: 1/1997
Benzene	<b>EH40/2005 WELs (United Kingdom (UK)). Absorbed through skin.</b> TWA: 1 ppm 8 hours. Issued/Revised: 5/2003
Hydrogen Sulphide	<b>EH40/2005 WELs (United Kingdom (UK)).</b> STEL: 14 mg/m <sup>3</sup> 15 minutes. Issued/Revised: 12/2001 STEL: 10 ppm 15 minutes. Issued/Revised: 12/2001 TWA: 7 mg/m <sup>3</sup> 8 hours. Issued/Revised: 12/2001 TWA: 5 ppm 8 hours. Issued/Revised: 12/2001

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482

<b>Product name</b> Clair Crude Oil	<b>Product code</b> SEP2208	<b>Page:</b> 6/15
<b>Version</b> 1	<b>Date of issue</b> 3 July 2014	<b>Format</b> United Kingdom (UK) (United Kingdom)
		<b>Language</b> ENGLISH

## SECTION 8: Exposure controls/personal protection

(Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### Derived No Effect Level

No DNELs/DNELs available.

### Predicted No Effect Concentration

No PNECs available

## 8.2 Exposure controls

### Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Respiratory protection

If local exhaust ventilation or other methods of ventilation are not possible or are insufficient, wear suitable respiratory protective devices. Wear suitable respiratory protective devices if there is a risk of exposure limits being exceeded. The choice of suitable respiratory device will depend upon a risk assessment of the workplace environment and the task being carried out. If required, the respiratory device must be certified as safe in defined explosive atmospheres (EX Label). Respiratory protective devices must be checked to ensure they fit correctly each time they are worn. Please consult European standard EN 529 for further guidance on the selection, use, care and maintenance of respiratory protective devices.

Suitable breathing apparatus (independent of ambient atmosphere) must be worn if any of the following situations apply.

- When the workplace atmosphere is considered to be immediately dangerous to life and health.
- When there is a risk of the workplace atmosphere being oxygen deficient.
- When the workplace atmosphere is uncontrolled.
- When the workplace atmosphere is unknown.
- When there is a risk of loss of consciousness or asphyxiation
- When entry into a confined space is required.
- When there is a risk of gases being released that could be a fire or explosion hazard.
- When the concentration of contaminants in the atmosphere exceeds the level of protection (maximum allowed concentration) given by a filtering device
- When the contaminants have a low odour that would not be tasted or smelt by the wearer of a filtering device if the filter became exhausted or saturated.
- When there is a risk of hydrogen sulphide exposure limits being exceeded.

Use with adequate ventilation.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

**Recommended:** Gas filter suitable for gases and vapours. Filter type: AX.  
Gas filter suitable for gases and vapours. Filter type: A.  
Combined filter suitable for gases, vapours and particles (dust, smoke, mist, aerosol). Filter type: AP.

Suitable breathing apparatus (independent of ambient atmosphere) must be worn where there is a risk of hydrogen sulfide exposure limits being exceeded. Personal gas monitors may also provide early warning of hydrogen sulphide.

#### Eye/face protection

Chemical splash goggles.

#### Skin protection

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 7/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

## SECTION 8: Exposure controls/personal protection

### Hand protection

#### General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Wear chemical resistant gloves.

Do not re-use gloves.

Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis.

Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture).

The frequency of replacement will depend upon the circumstances of use.

#### Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.

Our recommendations on the selection of gloves are as follows:

##### Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.

If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

##### Short-term / splash protection:

Recommended breakthrough times as above.

It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

#### Glove Thickness:

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

**Recommended:** Wear chemical resistant gloves. Nitrile gloves.

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 8/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH



## SECTION 8: Exposure controls/personal protection

### Skin and body

Wear suitable protective clothing.  
Footwear highly resistant to chemicals.  
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.  
Refer to standard: ISO 11612  
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.  
Refer to standard: EN 1149  
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination.  
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.  
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid.
Colour	Black.
Odour	Pungent.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Pour point	-24 °C
Flash point	Closed cup: <15°C (<59°F) [Pensky-Martens.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	910 kg/m <sup>3</sup> (0.91 g/cm <sup>3</sup> ) at 15°C
Solubility(ies)	insoluble in water.
Partition coefficient: n-octanol/water	>3
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Dynamic: 0.108 Pa·s (108 cP) at 20°C Kinematic: 34 mm <sup>2</sup> /s (34 cSt) at 40°C
Explosive properties	Not available.
Oxidising properties	Not available.

### 9.2 Other information

No additional information.

Product name Clair Crude Oil

Product code SEP2208

Page: 9/15

Version 1 Date of issue 3 July 2014

Format United Kingdom (UK) (United Kingdom)

Language ENGLISH

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
<b>10.2 Chemical stability</b>	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>10.4 Conditions to avoid</b>	Avoid all possible sources of ignition (spark or flame).
<b>10.5 Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials.
<b>10.6 Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Aspiration hazard

**Conclusion/Summary** May be fatal if swallowed and enters airways. Classification on basis substance is a hydrocarbon and has a kinematic viscosity of 20.5 mm<sup>2</sup>/s or less, measured at 40°C.

**Information on the likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation.

#### Potential acute health effects

**Inhalation** Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

**Ingestion** Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

**Skin contact** No known significant effects or critical hazards.

**Eye contact** No known significant effects or critical hazards.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Inhalation** Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

**Ingestion** Adverse symptoms may include the following:  
nausea or vomiting

**Skin contact** Adverse symptoms may include the following:  
irritation  
dryness  
cracking

**Eye contact** Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

#### Delayed and immediate effects and also chronic effects from short and long term exposure

**Inhalation** Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

**Ingestion** If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

**Skin contact** As with all such products containing potentially harmful levels of PCAs, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

**Eye contact** Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

#### Potential chronic health effects

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 10/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

## SECTION 11: Toxicological information

<b>General</b>	May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. This product contains n-hexane. Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Animal studies have also shown that n-hexane overexposure may cause testicular injury. However, animal studies conducted with commercial hexane, containing 53% n-hexane, showed neither peripheral nervous system damage nor testicular injury at inhalation exposures up to 9000 ppm. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.
<b>Carcinogenicity</b>	May cause cancer. Risk of cancer depends on duration and level of exposure. Exposure to benzene may result in effects to the hematopoietic system causing blood disorders including anaemia and leukaemia. Benzene is classified by EEC as a category 1 carcinogen - substances known to be carcinogenic to man. IARC assessment: benzene - carcinogenic to humans (Group 1)
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Environmental hazards** Toxic to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethylbenzene	-	-	Inherent

### 12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Crude oil	>3	-	low
ethylbenzene	3.6	1.1	low
n-hexane	4	-	high
Benzene	2.13	-	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Mobility** Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

### 12.5 Results of PBT and vPvB assessment

**PBT** No  
**vPvB** No

### 12.6 Other adverse effects

**Other ecological information** Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

**Hazardous waste** Yes.

**European waste catalogue (EWC)**

<b>Product name</b> Clair Crude Oil	<b>Product code</b> SEP2208	<b>Page:</b> 11/15
<b>Version</b> 1	<b>Date of issue</b> 3 July 2014	<b>Format</b> United Kingdom (UK) (United Kingdom)
		<b>Language</b> ENGLISH

**SECTION 13: Disposal considerations**

Waste code	Waste designation
13 07 03*	other fuels (including mixtures)

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

**Packaging**





**Methods of disposal**

Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

**Special precautions**

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information**

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	UN1267	UN1267	UN1267	UN1267
<b>14.2 UN proper shipping name</b>	PETROLEUM CRUDE OIL	PETROLEUM CRUDE OIL	PETROLEUM CRUDE OIL. Marine pollutant	PETROLEUM CRUDE OIL
<b>14.3 Transport hazard class(es)</b>	3 	3 	3 	3 
<b>14.4 Packing group</b>	I	I	I	I
<b>14.5 Environmental hazards</b>	Yes.	Yes.	Yes.	No.
<b>Additional information</b>	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <b>Hazard identification number</b> 33  <b>Tunnel code</b> D/E	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <b>Remarks</b> Table:C. Danger: 3+CMR+F	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  <b>Emergency schedules (EmS)</b> F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

**14.6 Special precautions for user** Not available.

**UK Emergency Action Code:** 3WE

**ADR/RID Classification code:** F1

**ADN Classification code:** F1

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** **Proper shipping name** MARPOL Annex 1 rules apply for bulk shipments by sea. Category: Crude oil

## SECTION 15: Regulatory information

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

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Substances of very high concern

None of the components are listed.

##### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.

#### Other regulations

##### REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

##### United States inventory (TSCA 8b)

All components are listed or exempted.

##### Australia inventory (AICS)

All components are listed or exempted.

##### Canada inventory

All components are listed or exempted.

##### China inventory (IECSC)

All components are listed or exempted.

##### Japan inventory (ENCS)

All components are listed or exempted.

##### Korea inventory (KECI)

All components are listed or exempted.

##### Philippines inventory (PICCS)

All components are listed or exempted.

### 15.2 Chemical Safety Assessment

Not applicable.

## SECTION 16: Other information

### Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 CSA = Chemical Safety Assessment  
 CSR = Chemical Safety Report  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 DPD = Dangerous Preparations Directive [1999/45/EC]  
 DSD = Dangerous Substances Directive [67/548/EEC]  
 EINECS = European Inventory of Existing Commercial chemical Substances  
 ES = Exposure Scenario  
 EUH statement = CLP-specific Hazard statement  
 EWC = European Waste Catalogue  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 OECD = Organisation for Economic Co-operation and Development  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
 RRN = REACH Registration Number  
 SADT = Self-Accelerating Decomposition Temperature  
 SVHC = Substances of Very High Concern  
 STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
 STOT-SE = Specific Target Organ Toxicity - Single Exposure  
 TWA = Time weighted average

**Product name** Clair Crude Oil

**Product code** SEP2208

**Page:** 13/15

**Version** 1 **Date of issue** 3 July 2014

**Format** United Kingdom (UK) (United Kingdom)

**Language** ENGLISH

**SECTION 16: Other information**

UN = United Nations  
 UVCB = Complex hydrocarbon substance  
 VOC = Volatile Organic Compound  
 vPvB = Very Persistent and Very Bioaccumulative

**Full text of abbreviated H statements**

H220 Extremely flammable gas.  
 H224 Extremely flammable liquid and vapour.  
 H225 Highly flammable liquid and vapour.  
 H280 Contains gas under pressure; may explode if heated.  
 H304 May be fatal if swallowed and enters airways.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H330 (inhalation) Fatal if inhaled.  
 H332 (inhalation) Harmful if inhaled.  
 H336 (Narcotic effects) May cause drowsiness or dizziness. (Narcotic effects)  
 H340 May cause genetic defects.  
 H350 May cause cancer.  
 H361f (Fertility) Suspected of damaging fertility.  
 H372 (blood system) Causes damage to organs through prolonged or repeated exposure. (blood system)  
 H373 May cause damage to organs through prolonged or repeated exposure.  
 H373 (peripheral nervous system) May cause damage to organs through prolonged or repeated exposure. (peripheral nervous system)  
 H400 Very toxic to aquatic life.  
 H411 Toxic to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]**

Acute Tox. 2, H330 ACUTE TOXICITY (inhalation) - Category 2  
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4  
 Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1  
 Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2  
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
 Carc. 1A, H350 CARCINOGENICITY - Category 1A  
 Carc. 1B, H350 CARCINOGENICITY - Category 1B  
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
 Flam. Gas 1, H220 FLAMMABLE GASES - Category 1  
 Flam. Liq. 1, H224 FLAMMABLE LIQUIDS - Category 1  
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2  
 Muta. 1B, H340 GERM CELL MUTAGENICITY - Category 1B  
 Press. Gas Comp. Gas, H280 GASES UNDER PRESSURE - Compressed gas  
 Repr. 2, H361f (Fertility) TOXIC TO REPRODUCTION (Fertility) - Category 2  
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2  
 STOT RE 1, H372 (blood system) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system) - Category 1  
 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
 STOT RE 2, H373 (peripheral nervous system) SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (peripheral nervous system) - Category 2  
 STOT SE 3, H336 (Narcotic effects) SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

**Full text of abbreviated R phrases**

R12- Extremely flammable.  
 R11- Highly flammable.  
 R45- May cause cancer.  
 R46- May cause heritable genetic damage.  
 R62- Possible risk of impaired fertility.  
 R26- Also very toxic by inhalation.  
 R23- Also toxic by inhalation.  
 R48/23/24/25- Also toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
 R20- Also harmful by inhalation.  
 R48/20- Also harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 R48/20/21/22- Also harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
 R65- Also harmful: may cause lung damage if swallowed.  
 R38- Irritating to skin.  
 R36/38- Irritating to eyes and skin.  
 R66- Repeated exposure may cause skin dryness or cracking.  
 R67- Vapours may cause drowsiness and dizziness.  
 R50- Very toxic to aquatic organisms.

<b>Product name</b> Clair Crude Oil	<b>Product code</b> SEP2208	<b>Page:</b> 14/15
<b>Version</b> 1	<b>Date of issue</b> 3 July 2014	<b>Format</b> United Kingdom (UK) (United Kingdom)
		<b>Language</b> ENGLISH

**SECTION 16: Other information**

**Full text of classifications [DSD/DPD]**

R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

F+ - Extremely flammable  
 F - Highly flammable  
 Carc. Cat. 1 - Carcinogen category 1  
 Muta. Cat. 2 - Mutagen category 2  
 Repr. Cat. 3 - Toxic to reproduction category 3  
 T+ - Very toxic  
 T - Toxic  
 Xn - Harmful  
 Xi - Irritant  
 N - Dangerous for the environment

**History**

**Date of issue/ Date of revision** 03/07/2014.  
**Date of previous issue** No previous validation.  
**Prepared by** Product Stewardship

 **Indicates information that has changed from previously issued version.**

**Notice to reader**

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