

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

**Product name** Energol CS 220  
**Product code** 401665-FR01  
**SDS no.** 401665  
**Product type** Liquid.

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

**Use of the substance/mixture** Lubricant for circulatory systems.  
 For specific application advice see appropriate Technical Data Sheet or consult our company representative.

**1.3 Details of the supplier of the safety data sheet**

**Supplier** Castrol (U.K.) Limited  
 Wakefield House  
 Pipers Way  
 Swindon  
 Wiltshire, SN3 1RE  
 United Kingdom

Tel.: +44 (0)1793 512712  
 Fax.: +44 (0)1793 486083

**E-mail address** MSDSadvice@bp.com

**1.4 Emergency telephone number**

**EMERGENCY TELEPHONE NUMBER** Carechem:+44 (0) 1235 239 670 (24 hours)

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

**Product definition** Mixture

**Classification according to Directive 1999/45/EC [DPD]**

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.  
 See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

**2.2 Label elements**

**Risk phrases** This product is not classified according to EU legislation.

**Safety phrases** Not applicable.

**Supplemental label elements** Not applicable.

**Special packaging requirements**

**Containers to be fitted with child-resistant fastenings** Not applicable.

**Tactile warning of danger** Not applicable.

**2.3 Other hazards**

**Other hazards which do not result in classification** Defatting to the skin.

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### SECTION 3: Composition/information on ingredients

**Substance/mixture** Mixture

Highly refined base oil (IP 346 DMSO extract < 3%). Proprietary performance additives.

**This product does not contain any hazardous ingredients at or above regulated thresholds.**

### 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. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.
- Inhalation** If inhaled, remove to fresh air. Get medical attention if symptoms appear.
- Ingestion** Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- Protection of first-aiders** No action shall be taken involving any personal risk or without suitable training.

#### 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

**Notes to physician** Treatment should in general be symptomatic and directed to relieving any effects.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

- Suitable extinguishing media** In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
- Unsuitable extinguishing media** Do not use water jet.

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

- Hazards from the substance or mixture** In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous combustion products** Combustion products may include the following:  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

#### 5.3 Advice for firefighters

- Special precautions for fire-fighters** No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
- Special protective equipment for fire-fighters** 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.

### SECTION 6: Accidental release measures

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

- For non-emergency personnel** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Floors may be slippery; use care to avoid falling. Put on appropriate personal protective equipment.
- For emergency responders** If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

#### 6.2 Environmental precautions

Avoid dispersal of spilled 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).

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## SECTION 6: Accidental release measures

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

#### Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Immediately contact emergency personnel. Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. 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. 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.

#### 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.

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

Store and use only in equipment/containers designed for use with this product. Keep away from heat and direct sunlight. 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. Do not store in unlabelled containers. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10).

#### Not suitable

Prolonged exposure to elevated temperature

### 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

#### ACGIH TLVs

Base oil - unspecified

#### ACGIH (United States).

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Mineral oil, mist

For information and guidance, the ACGIH values are included. For further information on these please consult your supplier.

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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

#### Derived No Effect Level

No DELs available.

#### Predicted No Effect Concentration

No PNEC available.

### 8.2 Exposure controls

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## SECTION 8: Exposure controls/personal protection

**Appropriate engineering controls** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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** Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure.  
 In case of insufficient ventilation, wear suitable respiratory equipment.  
 The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**Eye/face protection** Safety glasses with side shields.

### Skin protection

**Hand protection** Wear protective gloves if prolonged or repeated contact is likely.  
 Wear chemical resistant gloves.  
 Recommended: Nitrile gloves.  
 The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**Skin and body** Use of protective clothing is good industrial practice.  
 Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.  
 Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

**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

<b>Physical state</b>	Liquid.
<b>Colour</b>	Amber.
<b>Odour</b>	Oily.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Pour point</b>	-6 °C
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.

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**SECTION 9: Physical and chemical properties**

Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	894 kg/m <sup>3</sup> (0.894 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	Kinematic: 220 mm <sup>2</sup> /s (220 cSt) at 40°C
Explosive properties	Not available.
Oxidising properties	Not available.

**9.2 Other information**

No additional information.

**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 polymerisation will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	No specific data.
<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**

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

**Potential acute health effects**

<b>Inhalation</b>	Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	May cause skin dryness and irritation.
<b>Eye contact</b>	No known significant effects or critical hazards.

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

<b>Inhalation</b>	May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.
<b>Ingestion</b>	No specific data.
<b>Skin contact</b>	Adverse symptoms may include the following: irritation dryness cracking
<b>Eye contact</b>	No specific data.

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

<b>Inhalation</b>	Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
<b>Ingestion</b>	Ingestion of large quantities may cause nausea and diarrhoea.

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## SECTION 11: Toxicological information

<b>Skin contact</b>	Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
<b>Eye contact</b>	Potential risk of transient stinging or redness if accidental eye contact occurs.
<b>Potential chronic health effects</b>	
<b>General</b>	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<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** Not classified as dangerous

### 12.2 Persistence and degradability

Inherently biodegradable

### 12.3 Bioaccumulative potential

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

### 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.

### 12.5 Results of PBT and vPvB assessment

**PBT** Not applicable.

**vPvB** Not applicable.

### 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** The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

**Hazardous waste** Yes.

#### European waste catalogue (EWC)

Waste code	Waste designation
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils

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** Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Recycle, if possible.

#### Special precautions

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. 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.

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## SECTION 14: Transport information

	ADR/RID	ADN/ADNR	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user	Not available.	Not available.	Not available.	Not available.
Additional information	-	-	-	-

## 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** Not applicable.

##### Other regulations

<b>REACH Status</b>	The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.
<b>United States inventory (TSCA 8b)</b>	Not determined.
<b>Australia inventory (AICS)</b>	Not determined.
<b>Canada inventory</b>	Not determined.
<b>China inventory (IECSC)</b>	Not determined.
<b>Japan inventory (ENCS)</b>	Not determined.
<b>Korea inventory (KECI)</b>	Not determined.
<b>Philippines inventory (PICCS)</b>	Not determined.

### 15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

<b>Abbreviations and acronyms</b>	ADN/ADNR = 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]
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**SECTION 16: Other information**

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

**Full text of abbreviated H statements** Not applicable.

**Full text of classifications [CLP/GHS]** Not applicable.

**Full text of abbreviated R phrases** Not applicable.

**Full text of classifications [DSD/DPD]** Not applicable.

**History**

**Date of issue/ Date of revision** 22/03/2012.

**Date of previous issue** No previous validation.

**Prepared by** Product Stewardship

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

**Notice to reader**

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.

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