

## Castrol Radicool SF

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013

## Section 1. Identification

<b>GHS product identifier</b>	Castrol Radicool SF
<b>Product code</b>	467414-BE07
<b>SDS no.</b>	467414
<b><u>Relevant identified uses of the substance or mixture and uses advised against</u></b>	
<b>Use of the substance/ mixture</b>	Coolant and antifreeze. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
<b>Supplier</b>	Castrol (Shanghai) Management Co., Ltd. 3F, Building 5, No. 255 of Guiqiao Road, Shanghai P.R.C. 201206 Tel:+86 21 38605888
<b>EMERGENCY TELEPHONE NUMBER</b>	+86 (0)532 8388 9090

## Section 2. Hazards identification

<b>Classification of the substance or mixture</b>	ACUTE TOXICITY (oral) - Category 4 REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
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### GHS label elements

#### Hazard pictograms



#### Signal word

Warning

#### Hazard statements

H302 - Harmful if swallowed.  
H361 - Suspected of damaging fertility or the unborn child.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
(kidneys)

### Precautionary statements

#### Prevention

P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P280 - Wear protective gloves, protective clothing and eye or face protection.  
P260 - Do not breathe vapour.  
P270 - Do not eat, drink or smoke when using this product.  
P264 - Wash hands thoroughly after handling.

#### Response

P308 + P313 - IF exposed or concerned: Get medical attention.  
P301 + P312, P330 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

#### Storage

P405 - Store locked up.

#### Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Other hazards which do not result in classification

None known.

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## Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

Ethylene glycol Corrosion inhibitor.

Ingredient name	%	CAS number
Ethylene glycol	≥90	107-21-1
Sodium 2-ethylhexanoate	≤5	19766-89-3
Methyl-1h-benzotriazole	<1	29385-43-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	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 if symptoms occur.
<b>Inhalation</b>	If inhaled, remove to fresh air. Get medical attention.
<b>Skin contact</b>	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
<b>Ingestion</b>	If ingested, call a physician or Poison Control Center immediately. Get medical attention urgently informing the doctor that a product containing ethylene glycol has been ingested and specific treatment may be required. Transport casualty together with the product container, its label, or the safety data sheet urgently to hospital. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

### Indication of immediate medical attention and special treatment needed, if necessary

#### Notes to physician

#### Specific treatments

Ethylene Glycol: Gastric irrigation, ethanol or fomepizole may have value in treatment. Consult physician.

#### Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### Most important symptoms/effects, acute and delayed

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

## Section 5. Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

#### Unsuitable extinguishing media

Do not use water jet.

### Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur and the container may burst.

#### Hazardous thermal decomposition products

Combustion products may include the following:  
metal oxide/oxides  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)

### Special protective actions 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.

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## Section 5. Firefighting measures

### Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Contact 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. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

#### 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".

#### 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).

### Methods and material 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

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. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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 ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### 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.

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

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

#### Not suitable

Prolonged exposure to elevated temperature

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## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

<b>Ingredient name</b>	<b>Exposure limits</b>
Ethylene glycol	<b>GBZ 2.1 (China).</b> PC-TWA: 20 mg/m <sup>3</sup> 8 hours. Issued/ Revised: 4/2020 PC-STEL: 40 mg/m <sup>3</sup> 15 minutes. Issued/ Revised: 4/2020

#### Biological exposure indices

No exposure indices known.

#### Appropriate engineering controls

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.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

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.

#### 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.

### 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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### 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: Butyl gloves. Neoprene 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 protection

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

## Section 8. Exposure controls/personal protection

### Respiratory protection

and/or impervious chemical suits and boots will be required.

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.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

#### Physical state

Liquid.

#### Colour

Red. [Light]

#### Odour

Mild.

#### Odour threshold

Not available.

#### pH

7.5 to 9 [Conc. (% w/w): 50%]

#### Melting point/freezing point

Not available.

#### Boiling point, initial boiling point, and boiling range

175°C (347°F)

#### Drop Point

Not available.

#### Flash point

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
Ethylene glycol	111	231.8				

#### Evaporation rate

Not available.

Not applicable. Based on - Physical state

#### Lower and upper explosion limit/flammability limit

Not available.

#### Vapour pressure

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Ethylene glycol	0.09	0.012				
Sodium 2-ethylhexanoate	<0.000000008	<0.000000011		<0.000000008	<0.000000011	
Water	23.8	3.2				

#### Relative vapour density

Not available.

#### Relative density

Not available.

#### Density

1100 kg/m<sup>3</sup> (1.1 g/cm<sup>3</sup>) at 15.6°C

#### Solubility(ies)

Media	Result
water	Miscible in water.

#### Partition coefficient: n-octanol/water

Not applicable.

#### Auto-ignition temperature

Ingredient name	°C	°F	Method
Ethylene glycol	398	748.4	

#### Decomposition temperature

Not available.

#### Viscosity

Not available.

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## Section 9. Physical and chemical properties

### Particle characteristics

**Median particle size** Not applicable.

## Section 10. Stability and reactivity

<b>Reactivity</b>	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
<b>Chemical stability</b>	The product is stable.
<b>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>Conditions to avoid</b>	Avoid excessive heat.
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials. Hazardous reactions are possible with concentrated mineral acids, strong oxidizing agents, alkali metals and isocyanates. Combustible material.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> Oral	549.2 mg/kg

#### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Ethylene glycol	Category 2	oral	kidneys

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

### Potential acute health effects

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	Harmful if swallowed. Ethylene glycol: Ingestion of ethylene glycol can cause metabolic acidosis, kidney damage, central nervous system depression, and convulsions. The estimated human lethal dose is approximately 100 ml (3.4 ounces for an adult).

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

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.
<b>Skin contact</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations

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## Section 11. Toxicological information

### Ingestion

Adverse symptoms may include the following:  
nausea or vomiting  
reduced foetal weight  
increase in foetal deaths  
skeletal malformations

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Eye contact

Potential risk of transient stinging or redness if accidental eye contact occurs.

#### Inhalation

Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

#### Skin contact

Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

### Short term exposure

#### Potential immediate effects

Not available.

#### Potential delayed effects

Not available.

### Long term exposure

#### Potential immediate effects

Not available.

#### Potential delayed effects

Not available.

### Potential chronic health effects

#### General

May cause damage to organs through prolonged or repeated exposure. (kidney)

#### Carcinogenicity

No known significant effects or critical hazards.

#### Mutagenicity

No known significant effects or critical hazards.

#### Teratogenicity

Suspected of damaging the unborn child.

#### Developmental effects

Birth defects and decreased fetal weight have been observed in laboratory animals fed ethylene glycol in large amounts repeatedly during pregnancy.

#### Fertility effects

No known significant effects or critical hazards.

## Section 12. Ecological information

### Toxicity

#### Environmental effects

No known significant effects or critical hazards.

### Persistence/degradability

Expected to be biodegradable.

### Bioaccumulative potential

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

### Mobility in soil

#### Soil/water partition coefficient ( $K_{oc}$ )

Not available.

#### Mobility

Spillages may penetrate the soil causing ground water contamination.

### Other adverse effects

No known significant effects or critical hazards.

### Other ecological information

Miscible in water.

## Section 13. Disposal considerations

### Disposal methods

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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Diluted fluid should not be discharged into sewage systems unless provided for by local regulations. Dispose under conditions approved by the local authority or via a licensed waste disposal contractor.

## Section 14. Transport information

	China	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

**Special precautions for user** Not available.

**Matters needing attention for transportation** Ensure that any additional local government transport conditions are met

## Section 15. Regulatory information

### List of Goods banned for Importing

None of the components are listed.

### Drug Precursors Requiring an Import/Export License

None of the components are listed.

### Catalogue and classification of drug precursor chemicals

None of the components are listed.

### List of Explosive Precursors

None of the components are listed.

### International regulations

#### Montreal Protocol

Not listed.

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## Section 15. Regulatory information

### Stockholm Convention on Persistent Organic Pollutants

Not listed.

### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

### Safety, health and environmental regulations specific for the product

No known specific national and/or regional regulations applicable to this product (including its ingredients).

### Regulation according to other foreign laws

#### REACH Status

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

#### Australia inventory (AIC)

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 (CSCL)

All components are listed or exempted.

#### Korea inventory (KECI)

All components are listed or exempted.

#### Philippines inventory (PICCS)

All components are listed or exempted.

#### Taiwan Chemical Substances Inventory (TCSI)

All components are listed or exempted.

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

Not determined.

## Section 16. Other information

### History

Date of printing 7/4/2023

Date of issue/Date of revision 7/4/2023

Date of previous issue 3/8/2023

Version 4.02

Prepared by Product Stewardship

### Key to abbreviations

ACGIH = American Conference of Industrial Hygienists  
CAS Number = Chemical Abstracts Service Registry Number  
GHS = Global Harmonised System  
IATA = International Air Transport Association, the organisation  
IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.  
OEL = Occupational Exposure Limit  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
SDS = Safety Data Sheet  
STEL = Short term exposure limit  
TWA = Time weighted average  
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.  
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

### References

Not available.

Indicates information that has changed from previously issued version.

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## Section 16. Other information

### [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 BP Group.

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. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

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