

# Cleansorb

## SAFETY DATA SHEET

### Arcasolve HT Starch Breaker Enzyme

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

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

##### 1.1. Product identifier

**Product name** Arcasolve HT Starch Breaker Enzyme

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

**Identified uses** Acidising treatment of oil, gas and water wells.

**Uses advised against** No specific uses advised against are identified.

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

**Supplier** Cleansorb  
Unit 1J,  
Merrow Business Centre,  
Merrow Lane,  
Guildford,  
Surrey,  
GU4 7WA  
UK.  
T: +44(0) 1483 300 107  
F: +44(0) 1483 300 109  
E: contact@cleansorb.com

##### 1.4. Emergency telephone number

**Emergency telephone** +44 (0)1483 300 107  
(Monday - Friday 09.00 - 17.00h)

#### SECTION 2: Hazards identification

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

###### Classification

**Physical hazards** Not Classified

**Health hazards** Resp. Sens. 1 - H334

**Environmental hazards** Not Classified

##### 2.2. Label elements

###### Pictogram



**Signal word** Danger

**Hazard statements** H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Precautionary statements** P284 [In case of inadequate ventilation] wear respiratory protection.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
P501 Dispose of contents/container in accordance with national regulations.

**Contains** Amylase, α-

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**Supplementary precautionary statements** P261 Avoid breathing vapours.

### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

<b>Amylase, <math>\alpha</math>-</b>	<b>1 - &lt;2.5%</b>
CAS number: 9000-90-2	EC number: 232-565-6
<b>Classification</b>	
Resp. Sens. 1 - H334	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>General information</b>	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place. In the event of any sensitisation symptoms developing, ensure further exposure is avoided.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
<b>Skin contact</b>	Rinse immediately with plenty of water.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

<b>General information</b>	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	May cause sensitisation or allergic reactions in sensitive individuals. Prolonged inhalation of high concentrations may damage respiratory system.

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<b>Ingestion</b>	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
<b>Skin contact</b>	Prolonged contact may cause dryness of the skin.
<b>Eye contact</b>	May cause temporary eye irritation.

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

<b>Notes for the doctor</b>	Treat symptomatically. May cause sensitisation or allergic reactions in sensitive individuals.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media** The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

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

**Specific hazards** Containers can burst violently or explode when heated, due to excessive pressure build-up.

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

### 5.3. Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

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

**Personal precautions** No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Do not touch or walk into spilled material. Avoid inhalation of vapours. Use suitable respiratory protection if ventilation is inadequate.

### 6.2. Environmental precautions

**Environmental precautions** Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

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

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### Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

### 6.4. Reference to other sections

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

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

#### Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

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

#### Storage precautions

Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Protect from freezing and direct sunlight. Do not store near heat sources or expose to high temperatures. Protect containers from damage.

#### Storage class

Chemical storage.

### 7.3. Specific end use(s)

#### Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control parameters

#### Ingredient comments

No exposure limits known for ingredient(s).

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

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<b>Eye/face protection</b>	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
<b>Hand protection</b>	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
<b>Other skin and body protection</b>	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
<b>Hygiene measures</b>	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Warn cleaning personnel of any hazardous properties of the product.
<b>Respiratory protection</b>	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
<b>Environmental exposure controls</b>	Not regarded as dangerous for the environment.

### SECTION 9: Physical and Chemical Properties

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

<b>Appearance</b>	Coloured liquid.
<b>Colour</b>	Yellow. Brown.
<b>Odour</b>	Slight microbial fermentation odour.
<b>Odour threshold</b>	Not available.
<b>pH</b>	pH (concentrated solution): 5.00 - 7.00
<b>Melting point</b>	Not available.
<b>Initial boiling point and range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.

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<b>Solubility(ies)</b>	Miscible with water.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	Not applicable.
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.

### 9.2. Other information

**Other information** None.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** No potentially hazardous reactions known.

### 10.4. Conditions to avoid

**Conditions to avoid** Protect from freezing and direct sunlight.

### 10.5. Incompatible materials

**Materials to avoid** No specific material or group of materials is likely to react with the product to produce a hazardous situation.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** LD<sub>50</sub> > 2000 mg/kg, Oral, Rat Based on available data the classification criteria are not met.

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Skin corrosion/irritation

**Animal data** Based on available data the classification criteria are not met.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Based on available data the classification criteria are not met.

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### Respiratory sensitisation

**Respiratory sensitisation** There is evidence that the product can cause respiratory hypersensitivity.

### Skin sensitisation

**Skin sensitisation** Based on available data the classification criteria are not met.

### Germ cell mutagenicity

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.

### Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

### IARC carcinogenicity

None of the ingredients are listed or exempt.

### Reproductive toxicity

**Reproductive toxicity - fertility** Based on available data the classification criteria are not met.

### Reproductive toxicity - development

Based on available data the classification criteria are not met.

### Specific target organ toxicity - single exposure

**STOT - single exposure** Not classified as a specific target organ toxicant after a single exposure.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Not classified as a specific target organ toxicant after repeated exposure.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

### General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

### Inhalation

May cause sensitisation or allergic reactions in sensitive individuals. Prolonged inhalation of high concentrations may damage respiratory system.

### Ingestion

Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

### Skin contact

Prolonged contact may cause dryness of the skin.

### Eye contact

May cause temporary eye irritation.

### Route of entry

Ingestion Inhalation Skin and/or eye contact

### Target organs

No specific target organs known.

### Toxicological information on ingredients.

#### Amylase, $\alpha$ -

##### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** LC<sub>50</sub> >4.96 mg/l, Inhalation, Rat REACH dossier information. Based on available data the classification criteria are not met.

##### Skin corrosion/irritation

##### Animal data

Dose: 0.5 mL, 4 hours, Rabbit Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). REACH dossier information. Based on available data the classification criteria are not met.

##### Respiratory sensitisation

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<b>Respiratory sensitisation</b>	There is evidence that the product can cause respiratory hypersensitivity.
<b><u>Skin sensitisation</u></b>	
<b>Skin sensitisation</b>	Local Lymph Node Assay (LLNA) - Mouse: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	NOAEL > 1320 mg/kg/day, Oral, Rat REACH dossier information. Not classified as a specific target organ toxicant after repeated exposure.

### SECTION 12: Ecological Information

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

#### 12.1. Toxicity

**Toxicity** Based on available data the classification criteria are not met.

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: > 100 mg/l,

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: > 100 mg/l, Daphnia magna

#### Ecological information on ingredients.

##### Amylase, α-

<b>Toxicity</b>	Based on available data the classification criteria are not met.
<b>Acute toxicity - fish</b>	NOEC, 96 hours: 58.3 mg/l, Onchorhynchus mykiss (Rainbow trout)
<b>Acute toxicity - aquatic invertebrates</b>	EC <sub>50</sub> , 48 hours: 212 mg/l, Daphnia magna
<b>Acute toxicity - aquatic plants</b>	EC <sub>50</sub> , 72 hours: 24 mg/l, Scenedesmus subspicatus

#### 12.2. Persistence and degradability

**Persistence and degradability** The product is biodegradable.

#### Ecological information on ingredients.

##### Amylase, α-

<b>Persistence and degradability</b>	The product is readily biodegradable.
<b>Biodegradation</b>	Water - Degradation 99%: 28 days

#### 12.3. Bioaccumulative potential

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

**Partition coefficient** Not available.

#### Ecological information on ingredients.



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### Amylase, $\alpha$ -

**Bioaccumulative potential** Bioaccumulation is unlikely.

**Partition coefficient** log Pow: -1.3

#### 12.4. Mobility in soil

**Mobility** The product is water-soluble and may spread in water systems.

#### Ecological information on ingredients.

### Amylase, $\alpha$ -

**Mobility** Soluble in water.

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

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

#### Ecological information on ingredients.

### Amylase, $\alpha$ -

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

#### 12.6. Other adverse effects

**Other adverse effects** None known.

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

**General information** The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered.

**Disposal methods** Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

### **SECTION 14: Transport information**

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

#### 14.1. UN number

Not applicable.

#### 14.2. UN proper shipping name

Not applicable.

#### 14.3. Transport hazard class(es)

## Arcasolve HT Starch Breaker Enzyme

No transport warning sign required.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

#### Environmentally hazardous substance/marine pollutant

No.

### 14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78  
and the IBC Code

## SECTION 15: Regulatory information

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

#### National regulations

Health and Safety at Work etc. Act 1974 (as amended).

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].

EH40/2005 Workplace exposure limits.

#### EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Commission Regulation (EU) No 453/2010 of 20 May 2010.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Dangerous Preparations Directive 1999/45/EC.

Dangerous Substances Directive 67/548/EEC.

#### Authorisations (Title VII Regulation 1907/2006)

No specific authorisations are known for this product.

#### Restrictions (Title VIII Regulation 1907/2006)

No specific restrictions on use are known for this product.

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

#### Abbreviations and acronyms used in the safety data sheet

EC<sub>50</sub>: 50% of maximal Effective Concentration.

LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.

LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).

NOEC: No Observed Effect Concentration.

NOAEL: No Observed Adverse Effect Level.

PBT: Persistent, Bioaccumulative and Toxic substance.

vPvB: Very Persistent and Very Bioaccumulative.

## Arcasolve HT Starch Breaker Enzyme

<b>Classification procedures according to Regulation (EC) 1272/2008</b>	Resp. Sens. 1 - H334: : Calculation method.
<b>Training advice</b>	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
<b>Revision date</b>	28/10/2015
<b>Revision</b>	7
<b>Supersedes date</b>	20/10/2011
<b>SDS number</b>	3783
<b>Hazard statements in full</b>	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.