

SAFETY DATA SHEET**Caleffi C3 FAST Central Heating Cleaner 400ml**

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

Product name Caleffi C3 FAST Central Heating Cleaner 400ml
Product number 570915, EAN13: 8016615609998, 507915 TH, EAN13: 8016615610017

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

Identified uses Additive Cleaning agent.
Uses advised against Not suitable for use in PRIMATIC single feed cylinders.

1.3. Details of the supplier of the safety data sheet

Supplier CALEFFI S.p.A.
 S.R. 229, N.25
 Italy / 28010 / Fontaneto d'Agogna (NO)
 T: +39 0322 8491
 F: +39 0322 863305
 E: SDS@Lettergold.co.uk

Manufacturer Lettergold Water Treatment Solutions LLP
 Unit 4 Hammond Close
 Newmarket
 CB8 0AZ
 T: +44 1638 666 888
 F: +44 1638 666 999
 E: SDS@Lettergold.co.uk

1.4. Emergency telephone number

Emergency telephone +44 (0)845 880 60 50

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (EC 1272/2008)**

Physical hazards Aerosol 3 - H229
Health hazards Not Classified
Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Signal word Warning

Hazard statements EUH208 Contains 1,2-Benzisothiazol-3(2H)-one. May produce an allergic reaction.
 H229 Pressurised container: may burst if heated.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements P102 Keep out of reach of children.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P251 Do not pierce or burn, even after use.
 P273 Avoid release to the environment.
 P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
 P501 Dispose of contents/ container in accordance with national regulations.

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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

Propane-1,2-diol	25 - <50%
CAS number: 57-55-6	EC number: 200-338-0
Substance with National workplace exposure limits.	

Classification
Not Classified

Benzotriazole	3 - <5%
CAS number: 95-14-7	EC number: 202-394-1

Classification
Acute Tox. 4 - H302
Eye Irrit. 2 - H319
Aquatic Chronic 2 - H411

1,2-Benzisothiazol-3(2H)-one	<0.025%
CAS number: 2634-33-5	EC number: 220-120-9
M factor (Acute) = 1	

Classification
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Dam. 1 - H318
Skin Sens. 1 - H317
Aquatic Acute 1 - H400

sodium hydroxide	<0.025%
CAS number: 1310-73-2	EC number: 215-185-5

Classification
Skin Corr. 1A - H314
Eye Dam. 1 - H318

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.

Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

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Ingestion	Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.
Skin contact	Rinse with water.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Spray/mists may cause respiratory tract irritation.
Ingestion	Due to the physical nature of this product, it is unlikely that ingestion will occur.
Skin contact	Repeated exposure may cause skin dryness or cracking. May cause skin sensitisation or allergic reactions in sensitive individuals.
Eye contact	May be slightly irritating to eyes. May cause discomfort.

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

Notes for the doctor	Treat symptomatically.
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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. Bursting aerosol containers may be propelled from a fire at high speed. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant.
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

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Personal precautions 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.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Under normal conditions of handling and storage, spillages from aerosol containers are unlikely. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant. Absorb spillage with non-combustible, absorbent material. Flush contaminated area with plenty of water. For waste disposal, see Section 13. Wash thoroughly after dealing with a spillage.

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 Keep out of the reach of children. 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. Avoid exposing aerosol containers to high temperatures or direct sunlight. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin. Avoid contact with eyes. Avoid inhalation of vapours and spray/mists.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep containers upright. Protect containers from damage. Protect from sunlight. Do not store near heat sources or expose to high temperatures. Do not expose to temperatures exceeding 50°C/122°F.

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

Occupational exposure limits

Propane-1,2-diol

Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate

Long-term exposure limit (8-hour TWA): WEL 150 ppm 474 mg/m³ total vapour and particulates

sodium hydroxide

Short-term exposure limit (15-minute): WEL 2 mg/m³

WEL = Workplace Exposure Limit

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8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection

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. Wear protective gloves made of the following material: Nitrile rubber. 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.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures

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 after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. 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.

Environmental exposure controls

Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Light brown.
Odour	Slight.
Odour threshold	Not available.
pH	pH (concentrated solution): 7 - 8
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.

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Vapour density	Not available.
Relative density	1.15
Solubility(ies)	Soluble in water.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity See the other subsections of this section for further details.

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 Avoid exposing aerosol containers to high temperatures or direct sunlight. Pressurised container: may burst if heated

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 LD₅₀) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 16,064.26

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

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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.

Respiratory sensitisation

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

Skin sensitisation

Skin sensitisation May cause sensitisation or allergic reactions in sensitive individuals.

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

Spray/mists may cause respiratory tract irritation.

Ingestion

Due to the physical nature of this product, it is unlikely that ingestion will occur.

Skin contact

Repeated exposure may cause skin dryness or cracking. May cause skin sensitisation or allergic reactions in sensitive individuals.

Eye contact

May be slightly irritating to eyes. May cause discomfort.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target organs

No specific target organs known.

Toxicological information on ingredients.

Benzotriazole

Acute toxicity - oral

Notes (oral LD₅₀) REACH dossier information. Harmful if swallowed.

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

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Notes (dermal LD₅₀)	LD ₅₀ >2000 mg/kg, Dermal, Rabbit REACH dossier information. Based on available data the classification criteria are not met.
<u>Skin corrosion/irritation</u>	
Animal data	Dose: 0.5 g, 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.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.
Genotoxicity - in vivo	Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	NOAEL 12100 ppm, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Screening - NOAEL >200 mg/kg/day, Oral, Rat P REACH dossier information. Based on available data the classification criteria are not met.
Reproductive toxicity - development	Developmental toxicity: - NOAEL: >200 mg/kg/day, Oral, Rat No evidence of reproductive toxicity in animal studies.

SECTION 12: Ecological information

Ecotoxicity The product contains a substance which is very toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity

Ecological information on ingredients.

Benzotriazole

Toxicity	Toxic to aquatic life with long lasting effects.
<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hours: 180 mg/l, Brachydanio rerio (Zebra Fish)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 8.58 mg/l, Daphnia galeata
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 75 mg/l, Pseudokirchneriella subcapitata

12.2. Persistence and degradability

Persistence and degradability The degradability of the product is not known.

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Ecological information on ingredients.

Benzotriazole

Persistence and degradability	No biodegradation observed under test conditions.
Phototransformation	Water - Degradation : 10.7 days

12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	Not available.

Ecological information on ingredients.

Benzotriazole

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	log Pow: 1.34

12.4. Mobility in soil

Mobility	The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.
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Ecological information on ingredients.

Benzotriazole

Mobility	The product is soluble in water.
Adsorption/desorption coefficient	Water - log Koc: 1.69 @ 25°C

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.
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Ecological information on ingredients.

Benzotriazole

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

Other adverse effects	None known.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Reuse or recycle products wherever possible. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
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Disposal methods

Do not empty into drains. Empty containers must not be punctured or incinerated because of the risk of an explosion. 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.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	1950
UN No. (IMDG)	1950
UN No. (ICAO)	1950
UN No. (ADN)	1950

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	AEROSOLS
Proper shipping name (IMDG)	AEROSOLS
Proper shipping name (ICAO)	AEROSOLS
Proper shipping name (ADN)	AEROSOLS

14.3. Transport hazard class(es)

ADR/RID class	2.2
ADR/RID classification code	5A,5O
ADR/RID label	2.2
IMDG class	2.2
ICAO class/division	2.2
ADN class	2.2

Transport labels



14.4. Packing group

ADR/RID packing group	None
IMDG packing group	None
ICAO packing group	None
ADN packing group	None

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-D, S-U
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ADR transport category 3

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

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

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 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. The Aerosol Dispensers Regulations 2009 (SI 2009 No. 2824).
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 2015/830 of 28 May 2015. 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). Council Directive of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (75/324/EEC) (as amended).

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	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). EC ₅₀ : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Aerosol = Aerosol Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Classification procedures according to Regulation (EC) 1272/2008	Aquatic Chronic 3 - H412: : Calculation method. Aerosol 3 - H229: : Expert judgement.
Training advice	Only trained personnel should use this material.

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Revision comments	This is the first issue.
Revision date	16/01/2019
SDS number	8406
Hazard statements in full	H229 Pressurised container: may burst if heated. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects. EUH208 Contains 1,2-Benzisothiazol-3(2H)-one. May produce an allergic reaction.

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.