SAFETY DATA SHEET
HALO CS3

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

1.1. Product identifier

Product name HALO CS3

Product number 63090

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

Identified uses Surfactant

1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
BD3 7AY
+44 1274 267300
+44 1274 267306
SDS.EMEA@univarsolutions.com

1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 63090

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318

Environmental hazards Aquatic Chronic 3 - H412

2.2. Label elements

Hazard pictograms

Signal word Danger

Hazard statements

H315 Causes skin irritation.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

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Precautionary statements P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Contains ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS, SODIUM ALPHA OLEFIN (C14-16) SULPHONATE, AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

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

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS **10-30%**

CAS number: 68891-38-3 EC number: 500-234-8 REACH registration number: 01-2119488639-16-XXXX

Classification
Skin Irrit. 2 - H315
Eye Dam. 1 - H318
Aquatic Chronic 3 - H412

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE **1-5%**

CAS number: 68439-57-6 EC number: 931-534-0 REACH registration number: 01-2119513401-57-XXXX

Classification
Skin Irrit. 2 - H315
Eye Dam. 1 - H318

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES **1-5%**

CAS number: 308062-28-4 EC number: 931-292-6 REACH registration number: 01-2119490061-47-XXXX

M factor (Acute) = 1

Classification
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Dam. 1 - H318
Aquatic Acute 1 - H400
Aquatic Chronic 2 - H411

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

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

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4.1. Description of first aid measures

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

Ingestion Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if any discomfort continues.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

Ingestion May cause discomfort if swallowed.

Skin contact Skin irritation.

Eye contact Causes serious eye damage.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

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

Hazardous combustion products Oxides of carbon. Sulphurous gases (SOx).

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Provide adequate ventilation. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place.

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).

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS (CAS: 68891-38-3)

DNEL
Workers - Inhalation; Long term systemic effects: 175 mg/m³
Workers - Dermal; Long term systemic effects: 2750 mg/kg/day
General population, Consumer - Oral; Long term systemic effects: 15 mg/kg/day
General population, Consumer - Inhalation; Long term systemic effects: 52 mg/m³
General population, Consumer - Dermal; Long term systemic effects: 1650 mg/kg/day

PNEC
- Fresh water; 0.24 mg/l
- marine water; 0.024 mg/l
- STP; 10000 mg/l
- Sediment (Freshwater); 5.45 mg/kg
- Sediment (Marinewater); 0.545 mg/kg
- Soil; 0.946 mg/kg

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE (CAS: 68439-57-6)

DNEL
Workers - Dermal; Long term systemic effects: 2158.33 mg/kg/day
Workers - Inhalation; Long term systemic effects: 152.22 mg/m³
Consumer - Dermal; Long term systemic effects: 1295 mg/kg/day
Consumer - Oral; Long term systemic effects: 12.95 mg/kg/day

PNEC
marine water; 0.0042 mg/l
Sediment (Marinewater); 0.2025 mg/kg
Sediment (Freshwater); 2.025 mg/kg
Soil; 0.0061 mg/kg
Fresh water; 0.042 mg/l
STP; 4 mg/l

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES (CAS: 308062-28-4)

DNEL
Workers - Inhalation; Long term systemic effects: 15.5 mg/m³
Workers - Dermal; Long term systemic effects: 11 mg/kg/day
General population - Inhalation; Long term systemic effects: 3.8 mg/m³
General population - Dermal; Long term systemic effects: 5.5 mg/kg
General population - Oral; Long term systemic effects: 0.44 mg/kg

PNEC	- Fresh water; 0.0335 mg/l - marine water; 0.00335 mg/l - STP; 24 mg/l Secondary poisoning.; 11 mg/kg - Sediment (Freshwater); 5.24 mg/kg - Sediment (Marinewater); 0.524 mg/kg - Soil; 1.02 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate ventilation.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	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.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash hands after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke. Eye wash facilities and emergency shower must be available when handling this product.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Straw.
Odour threshold	No information available.
pH	pH (concentrated solution): 7
Melting point	No information available.
Pour Point	No information available.
Freezing Point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.

Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	1.04
Bulk density	No information available.
Solubility(ies)	No information available.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	300 cP @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stability Store between 5 to 40°C (41 to 104°F) Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not known.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

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Materials to avoid Not determined.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of the following substances: Carbon. Sulphur.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 98,518.52

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Animal data Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion May cause stomach pain or vomiting.

Skin contact Irritating to skin.

Eye contact Causes serious eye damage.

Toxicological information on ingredients.

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg) 4,100.0

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Species	Rat
ATE oral (mg/kg)	4,100.0

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} >2000 mg/kg, Dermal, Rat

Skin corrosion/irritation

Skin corrosion/irritation	Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation	Not sensitising.

Skin sensitisation

Skin sensitisation	Not sensitising. Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met. Ames test OECD 471

Carcinogenicity

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

Reproductive toxicity

Reproductive toxicity - fertility	- NOAEL >300 mg/kg, Oral, Rat OECD 416
Reproductive toxicity - development	- NOAEL: >1000 mg/kg, Oral, Rat OECD 414

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	NOAEL >225 mg/kg, Oral, Rat OECD 408

Inhalation	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion	May cause burns in mucous membranes, throat, oesophagus and stomach.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Acute toxicity - oral

Notes (oral LD_{50})	LD_{50} 2079 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} 6300 - 13500 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Notes (inhalation LC_{50})	LC_{50} >52 mg/l, Inhalation, Rat

Skin corrosion/irritation

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Skin corrosion/irritation	Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation	No information available.

Skin sensitisation

Skin sensitisation	Not sensitising. Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro	Bacterial reverse mutation test: Negative. OECD 471 Chromosome aberration: Negative. OECD 473

Carcinogenicity

Carcinogenicity	No information available.

Reproductive toxicity

Reproductive toxicity - development	Teratogenicity: - NOAEL: 2 mg/kg, Oral, Rabbit

Specific target organ toxicity - single exposure

STOT - single exposure	No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	No information available.

Aspiration hazard

Aspiration hazard	No information available.

Inhalation	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion	May cause discomfort if swallowed.
Skin contact	Causes skin irritation.
Eye contact	Causes severe skin burns and eye damage. May cause permanent damage if eye is not immediately irrigated.

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	1,064.0
Species	Rat
Notes (oral LD_{50})	Harmful if swallowed. LD_{50} 1064 mg/kg, Oral, Rat
ATE oral (mg/kg)	1,064.0

Acute toxicity - dermal

Notes (dermal LD_{50})	LD_{50} > 2000 mg/kg, Dermal, Rat

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Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage. Rabbit

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Genotoxicity - in vivo Chromosome aberration: Negative.

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Summary - NOAEL: 25 mg/kg, Oral, Rat
- : NOEL: 100 mg/kg, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Sub - Chronic NOAEL 88 mg/kg, Oral, Rat

Aspiration hazard

Aspiration hazard No information available.

Inhalation Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion Harmful if swallowed. May cause discomfort if swallowed.

Skin contact Causes skin irritation.

Eye contact Causes serious eye damage.

SECTION 12: Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Ecological information on ingredients.

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Ecotoxicity The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

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12.1. Toxicity

Toxicity Harmful to aquatic life.

Ecological information on ingredients.

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >7.1 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 7.4 mg/l, Daphnia magna OECD 202 NOEC, 48 hours: 0.27 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 27.7 mg/l, Algae OECD 201

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Toxicity There are no data on the ecotoxicity of this product.

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: 4.2 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 4.53 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 5.2 mg/l, Algae
Acute toxicity - microorganisms	IC_{50}, 3 hours: 230 mg/l, Activated sludge OECD 209

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 6.7 mg/l, Daphnia magna OECD 211

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Toxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Acute aquatic toxicity

$LE(C)_{50}$	0.1 < L(E)C50 ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC_{50}, 96 hours: 2.67 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 3.1 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC_{50}, 72 hours: 0.146 mg/l, Algae OECD 201 Chronic, NOEC, 28 day: 0.067 mg/l, Algae OECD 201

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	NOEC, 302 days: 0.42 mg/l, Fish
Chronic toxicity - aquatic invertebrates	NOEC, 21 days: 0.7 mg/l, Daphnia magna OECD 211

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Ecological information on ingredients.

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation (%) 100: 28 days

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Persistence and degradability	The product is readily biodegradable.
Biodegradation	- Degradation > 60%: 28 days OECD 301B

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation >60 %: 28 days OECD 301B - Degradation 73%: 57 days OECD 314C

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS

Bioaccumulative potential	The product does not contain any substances expected to be bioaccumulating. BCF: < 3,
Partition coefficient	log Pow: 0.3

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Bioaccumulative potential	Bioaccumulation is unlikely. BCF: 70.8,
Partition coefficient	log Pow: -1.3

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Bioaccumulative potential	Bioaccumulation is unlikely.

Partition coefficient log Pow: 2.7

12.4. Mobility in soil

Mobility Not determined.

Ecological information on ingredients.

ALCOHOLS, C12-14, ETHOXYLATED, SULFATES, SODIUM SALTS

Mobility The product is soluble in water.

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Mobility The product is soluble in water.

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Mobility No information available.

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.

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

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

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

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 Not known.

Ecological information on ingredients.

SODIUM ALPHA OLEFIN (C14-16) SULPHONATE

Other adverse effects None known.

AMINES, C12-14 (EVEN NUMBERED)-ALKYLDIMETHYL, N-OXIDES

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

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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)

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 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

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).
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).
Commission Regulation (EU) No 2015/830 of 28 May 2015.

Restrictions (Annex XVII Regulation 1907/2006) This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

HALO CS3

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
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.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC_{50}: Lethal Concentration to 50 % of a test population.
LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC_{50}: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Acute = Hazardous to the aquatic environment (acute)
Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Classification procedures according to Regulation (EC) 1272/2008

Skin Irrit. 2 - H315: Calculation method. Eye Dam. 1 - H318: Calculation method. Aquatic Chronic 3 - H412: Calculation method.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

26/11/2021

HALO CS3

Version number	1.000
SDS number	63090
SDS status	Approved.
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.
Signature	Jitendra Panchal

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.