Safety Data Sheet
ANTIVEGETATIVO GASOLIO

Safety Data Sheet dated 27/10/2021, version 2

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

1.1. Product identifier

Mixture identification:

Trade name: ANTIVEGETATIVO GASOLIO

Trade code: 9869

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

Recommended use:

Fuel additive

1.3. Details of the supplier of the safety data sheet

Supplier:

Arexons S.p.A.

via Antica di Cassano, 23, 20063

Cernusco sul Naviglio (MI), Italy

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

Competent person responsible for the safety data sheet:

arexons@arexons.it

1.4. Emergency telephone number

Arexons S.p.A.

Tel. +39 (0)2/924361 - Fax +39 (0)2/92436306

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

In Ireland: Beaumont Hospital - National Poisons Information Centre 01 809 2166 (7days, 8:00 - 22:00)

In South Africa: Poison Information Helpline 0861 555 777

In Malta: emergency number 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP):

Warning, Skin Irrit. 2, Causes skin irritation.

Danger, Eye Dam. 1, Causes serious eye damage.

Warning, STOT SE 3, May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Danger

Hazard statements:

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/clothing and eye/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER.
P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:
None

Contains
2-Ethylhexan-1-ol
(Benzyloxy)methanol

Special provisions according to Annex XVII of REACH and subsequent amendments:
None

2.3. Other hazards
No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances
N.A.

3.2. Mixtures
Hazardous components within the meaning of the CLP regulation and related classification:

>= 50% - < 60% 2-Ethylhexan-1-ol
REACH No.: 01-2119487289-20, CAS: 104-76-7, EC: 203-234-3
3.8/3 STOT SE 3 H335
3.3/2 Eye Irrit. 2 H319
3.2/2 Skin Irrit. 2 H315
3.1/4/Inhal Acute Tox. 4 H332

>= 40% - < 50% (Benzyloxy)methanol
CAS: 14548-60-8, EC: 238-588-8
3.1/4/Oral Acute Tox. 4 H302
3.1/4/Dermal Acute Tox. 4 H312
3.2/2 Skin Irrit. 2 H315
3.3/1 Eye Dam. 1 H318
3.8/3 STOT SE 3 H335

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:
Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
OBTAIN IMMEDIATE MEDICAL ATTENTION.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:
After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.
In case of Ingestion:
Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.
In case of Inhalation:
In case of inhalation, consult a doctor immediately and show him packing or label.
4.2. Most important symptoms and effects, both acute and delayed
None
4.3. Indication of any immediate medical attention and special treatment needed
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
None

SECTION 5: Firefighting measures

5.1. Extinguishing media
Appropriate Extinguishing Media:
Water spray.
To carbon dioxide.
To dust.
Foam for alcohols
Not Recommended Extinguishing Media:

5.2. Special hazards arising from the substance or mixture
Do not inhale explosion and combustion gases.
Burning produces heavy smoke.
5.3. Advice for firefighters
Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
See protective measures under point 7 and 8.
6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand
6.3. Methods and material for containment and cleaning up
Wash with plenty of water.
6.4. Reference to other sections
See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid contact with skin and eyes, inhalation of vapours and mists.

Use localized ventilation system.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.
None in particular.
Instructions as regards storage premises:
Adequately ventilated premises.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-Ethylhexan-1-ol - CAS: 104-76-7
EU - TWA(8h): 5.4 mg/m3, 1 ppm
ACGIH - TWA: 50 ppm

DNEL Exposure Limit Values

2-Ethylhexan-1-ol - CAS: 104-76-7
Worker Professional: 12.8 mg/m3 - Consumer: 2.3 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 53.2 mg/m3 - Consumer: 26.6 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, local effects
Worker Professional: 53.2 mg/m3 - Consumer: 26.6 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects
Worker Professional: 23 mg/kg - Consumer: 11.4 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 1.1 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

2-Ethylhexan-1-ol - CAS: 104-76-7
Target: Fresh Water - Value: 0.017 mg/l
Target: Marine water - Value: 0.0017 mg/l
Target: Freshwater sediments - Value: 0.28 mg/kg
Target: Marine water sediments - Value: 0.028 mg/kg
Target: 09 - Value: 10 mg/l

8.2. Exposure controls

Eye protection:
Eye glasses with side protection.
Compliant with EN 166

Protection for skin:
protective clothing

Protection for hands:
PVC (polyvinyl chloride).
Nitrile or Viton gloves.
Compliant with EN 374.

Respiratory protection:
In case of insufficient ventilation, use adequate respiratory protection equipment.
Filtering device (DIN EN 147).
Filter for organic vapours. Type A. (EN14387)

Thermal Hazards:
None

Environmental exposure controls:
None
Appropriate engineering controls:
None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Physical state:	Liquid	--	--
Colour:	Colourless	--	--
Odour:	pungente	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	N.A.	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	>65°C	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	0.9536 g/ml	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information
No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable under normal conditions
10.2. Chemical stability
Stable under normal conditions
10.3. Possibility of hazardous reactions
None
10.4. Conditions to avoid
Stable under normal conditions.
10.5. Incompatible materials
None in particular.
10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Toxicological information of the product:
ANTIVEGETATIVO GASOLIO
a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
c) serious eye damage/irritation
The product is classified: Eye Dam. 1 H318
d) respiratory or skin sensitisation
Not classified
Based on available data, the classification criteria are not met
e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met
g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
h) STOT-single exposure
The product is classified: STOT SE 3 H335
i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met
Toxicological information of the main substances found in the product:
2-Ethylhexan-1-ol - CAS: 104-76-7
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 2047 mg/kg
Test: LC50 - Route: Skin - Species: Rat > 3000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat 0.89-5.3 mg/l - Duration: 4h
c) serious eye damage/irritation:
Test: Eye Irritant - Species: Rabbit Positive

d) respiratory or skin sensitisation:
Test: Skin Sensitization - Species: Rabbit Negative
e) germ cell mutagenicity:
Test: Mutagenesis Negative
f) carcinogenicity:
Test: NOAEL - Route: Oral - Species: Rat 500 mg/kg
g) reproductive toxicity:
Test: NOAEL - Species: Rat 130 mg/kg
h) STOT-single exposure:
Test: NOAEL - Route: Oral - Species: Rat 250 mg/kg
Test: NOAEL - Route: Inhalation - Species: Rat 638.4 mg/m3
(Benzyloxy)methanol - CAS: 14548-60-8
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 1700 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 1000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat > 502 mg/m3 - Duration: 4h

11.2. Information on other hazards
Endocrine disrupting properties:
No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity
Adopt good working practices, so that the product is not released into the environment.
2-Ethylhexan-1-ol - CAS: 104-76-7
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish 28.2 mg/l - Duration h: 96
Endpoint: LC50 - Species: Fish 17.1 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia 39 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae 16.6 mg/l - Duration h: 72
Endpoint: EC50 - Species: fanghi > 100 mg/l - Duration h: 12
Endpoint: EC50 - Species: fanghi 540 mg/l - Duration h: 2.4
b) Aquatic chronic toxicity:
Endpoint: NOEC - Species: Fish 14 mg/l - Duration h: 96
(Benzyloxy)methanol - CAS: 14548-60-8
a) Aquatic acute toxicity:
Endpoint: EC50 - Species: Daphnia 43 mg/l - Duration h: 48
Endpoint: CE4 - Species: Algae 17.7 mg/l - Duration h: 72
Endpoint: LC50 - Species: Fish 81.5 mg/l - Duration h: 96

12.2. Persistence and degradability
None
2-Ethylhexan-1-ol - CAS: 104-76-7
Biodegradability: 4 - Duration: 14 days - %: 100
(Benzyloxy)methanol - CAS: 14548-60-8
Biodegradability: 4 - Test: BIOGDG12 - Duration: 18gg - %: 100

12.3. Bioaccumulative potential
2-Ethylhexan-1-ol - CAS: 104-76-7
Test: BCF - Bioconcentrantion factor 25.33
(Benzyloxy)methanol - CAS: 14548-60-8
Test: log Pow 0.3

12.4. Mobility in soil
2-Ethylhexan-1-ol - CAS: 104-76-7
Test: Log Koc 1.415

12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

ADR-Enviromental Pollutant: No
IMDG-Marine pollutant: No

14.6. Special precautions for user

N.A.

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:
Restriction 3
Restrictions related to the substances contained:
No restriction.

Volatile Organic compounds - VOCs = 100.00 %
Volatile Organic compounds - VOCs = 1000.00 g/Kg
Volatile Organic compounds - VOCs = 953.60 g/l
Where applicable, refer to the following regulatory provisions :
Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
None

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for the mixture.
Substances for which a Chemical Safety Assessment has been carried out:
None

SECTION 16: Other information

Text of phrases referred to under heading 3:
H335 May cause respiratory irritation.
H319 Causes serious eye irritation.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H318 Causes serious eye damage.

Hazard class and hazard category	Code	Description
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 2: Hazards identification
SECTION 9: Physical and chemical properties

SECTION 11: Toxicological information
SECTION 12: Ecological information
SECTION 14: Transport information
SECTION 15: Regulatory information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	**Classification procedure**
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
STOT SE 3, H335	Calculation method

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
NA:	Not applicable
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.

STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.

Exposure Scenario, 11/07/2019

Substance identity	
Chemical name	2-Ethylhexan-1-ol
CAS No.	104-76-7
EINECS No.	203-234-3

Table of contents

1. ES 1 Widespread use by professional workers

1.1 TITLE SECTION

Exposure Scenario name	Handling and dilution of concentrates
Date - Version	11/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Environment Contributing Scenario	
CS1 Solvent-based process	ERC8d
Worker Contributing Scenario	
CS2 Handling and dilution of concentrates	PROC5 - PROC8a - PROC8b

1.2 Conditions of use affecting exposure

1.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
< 0.5 kPa

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use (or from service life)

Amounts used:
Daily amount per site 2.74 kg/day

Release type: Continuous release

Emission days: 365 days per year

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
STP effluent (m^3/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment
Product residual disposal complies with applicable regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10

1.2. CS2: Worker Contributing Scenario: Handling and dilution of concentrates (PROC5, PROC8a, PROC8b)

Process Categories	Mixing or blending in batch processes - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC5, PROC8a, PROC8b)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 0.5 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Ensure operatives are trained to minimise exposures.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.
Use suitable eye protection.

Other conditions affecting worker exposure

Covers indoor and outdoor use
Professional use
Temperature: Covers use at ambient temperatures.
Ventilation rate: Provide forced ventilation > 3 ach (air changes per hour)

1.3 Exposure estimation and reference to its source

1.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.08 mg/L	N/A	0.008
freshwater	0.01 mg/L	N/A	0.00058
freshwater sediment	0.163 mg/kg bw/day	N/A	0.0005739
marine water	0.000953 mg/L	N/A	0.0005606
marine sediment	0.016 mg/kg bw/day	N/A	0.0005634
soil	0.023 mg/kg bw/day	N/A	0.0004894

1.3. CS2: Worker Contributing Scenario: Handling and dilution of concentrates (PROC5, PROC8a, PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, local, long-term	4.6 mg/m³	N/A	0.36
inhalative, systemic, long-term	7.6 mg/m³	N/A	0.59
inhalative, systemic, long-term	6.8 mg/m³	N/A	0.53
inhalative, systemic, long-term	4.9 mg/m³	N/A	0.38

inhalative, systemic, long-term	2.9 mg/m³	N/A	0.23
inhalative, systemic, long-term	2.3 mg/m³	N/A	0.18
dermal, systemic, long-term	8.2 mg/kg bw/day	N/A	0.358
dermal, systemic, long-term	2.7 mg/kg bw/day	N/A	0.119
dermal, systemic, long-term	1.6 mg/kg bw/day	N/A	0.072
dermal, systemic, long-term	0.55 mg/kg bw/day	N/A	0.024
dermal, systemic, long-term	1.6 mg/kg bw/day	N/A	0.072

1.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2. ES 2 Consumer use; Various products (PC8, PC13)

2.1 TITLE SECTION

Exposure Scenario name	Handling and dilution of concentrates
Date - Version	11/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Biocidal products (PC8) - Fuels (PC13)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC8a - ERC8d

Consumer Contributing Scenario	
CS2 Fuel additives	PC8 - PC13

2.2 Conditions of use affecting exposure

2.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a, ERC8d)

Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) - Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8a, ERC8d)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
> 10 Pa

Concentration of substance in product:
Covers percentage substance in the product up to 25 %.

Conditions and measures related to treatment of waste (including article waste)

Waste treatment

Product residual disposal complies with applicable regulations.	Waste - minimum efficiency of: > 88.4 %

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10
Receiving surface water flow: 2000 m³/day

2.2. CS2: Consumer Contributing Scenario: Fuel additives (PC8, PC13)

Product Categories	Biocidal products - Fuels (PC8, PC13)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:

> 10 Pa

Concentration of substance in product:

Covers percentage substance in the product up to 25 %.

Amount used, frequency and duration of use/exposure

Amounts used:

Amount per use 1000 g

Duration:

Covers exposure up to 1.3 min/day

Frequency:

Covers frequency up to: 24 times per year

Other conditions affecting consumers exposure

Room size: Covers use in room size of 20 m³

2.3 Exposure estimation and reference to its source

2.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC8a, ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.04 mg/L	N/A	0.004
freshwater	0.006 mg/L	N/A	0.0003529
freshwater sediment	0.096 mg/kg bw/day	N/A	0.000338
marine water	0.000555 mg/L	N/A	0.0003265
marine sediment	0.009 mg/kg bw/day	N/A	0.000316
soil	0.012 mg/kg bw/day	N/A	0.0002553

2.2. CS2: Consumer Contributing Scenario: Fuel additives (PC8, PC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.001 mg/m³	N/A	0.000434
inhalative, systemic, short-term	1.12 mg/m³	N/A	0.0421
dermal, systemic, long-term	0.083 mg/kg bw/day	N/A	0.00728

2.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

3. ES 3 Use at industrial site

3.1 TITLE SECTION

Exposure Scenario name	Professional use of general surface cleaning products
Date - Version	11/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Sector(s) of use	Industrial uses (SU3)

Environment Contributing Scenario	
CS1 Solvent-based process	ERC4

Worker Contributing Scenario	
CS2 Industrial	PROC2 - PROC3 - PROC7 - PROC8a - PROC8b

3.2 Conditions of use affecting exposure

3.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Product (article) characteristics

Physical form of product:
Liquid

Vapour pressure:
< 0.5 kPa

Amount used, frequency and duration of use (or from service life)

Amounts used:
Annual site tonnage 300 t(onnes)/year

Release type: Continuous release

Emission days: 300 days per year

Conditions and measures related to sewage treatment plant

STP type:
Municipal Sewage Treatment Plant
Water - minimum efficiency of: > 88.4 %
STP effluent (m^3/day): 2000

Conditions and measures related to treatment of waste (including article waste)

Waste treatment
Product residual disposal complies with applicable regulations.

Other conditions affecting environmental exposure

Local marine water dilution factor: 100
Local freshwater dilution factor: 10

3.2. CS2: Worker Contributing Scenario: Industrial (PROC2, PROC3, PROC7, PROC8a, PROC8b)

Process Categories	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions - Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition - Industrial spraying - Transfer of substance

	or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC2, PROC3, PROC7, PROC8a, PROC8b)

Product (article) characteristics

Physical form of product:

Liquid

Vapour pressure:

< 0.5 kPa

Concentration of substance in product:

Covers percentage substance in the product up to 100 %.

Amount used, frequency and duration of use/exposure

Duration:

Covers daily exposures up to 8 hours

Technical and organisational conditions and measures

Technical and organisational measures

Use of an integrated local exhaust ventilation is required.
Use of suppression techniques are required.
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).
Ensure operatives are trained to minimise exposures.
Drain down and flush system prior to equipment break-in or maintenance.

Conditions and measures related to personal protection, hygiene and health evaluation

Personal protection

Wear suitable gloves tested to EN374.
Use suitable eye protection.

Other conditions affecting worker exposure

Temperature: Covers use at ambient temperatures.

3.3 Exposure estimation and reference to its source

3.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC4)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
wastewater treatment plant microbes	0.002 mg/L	N/A	0.0002
freshwater	0.002 mg/L	N/A	0.0001176
freshwater sediment	0.032 mg/kg KW	N/A	0.0001127
marine water	0.000171 mg/L	N/A	0.0001006
marine sediment	0.003 mg/kg bw/day	N/A	0.0001056
soil	0.037 mg/kg bw/day	N/A	0.0007872

3.3. CS2: Worker Contributing Scenario: Industrial (PROC2, PROC3, PROC7, PROC8a, PROC8b)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	1.1 mg/m³	N/A	0.08

inhalative, systemic, long-term	3.2 mg/m³	N/A	0.25
inhalative, systemic, long-term	7.6 mg/m³	N/A	0.59
inhalative, systemic, long-term	5.4 mg/m³	N/A	0.42
inhalative, systemic, long-term	3.8 mg/m³	N/A	0.3
inhalative, systemic, long-term	8.1 mg/m³	N/A	0.63
dermal, systemic, long-term	0.27 mg/kg bw/day	N/A	0.012
dermal, systemic, long-term	0.14 mg/kg bw/day	N/A	0.006
dermal, systemic, long-term	1.7 mg/kg bw/day	N/A	0.075
dermal, systemic, long-term	2.7 mg/kg bw/day	N/A	0.119

3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Guidance to check compliance with the exposure scenario:

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.