

**Safety Data Sheet**  
**PETRONAS Durance CROMATURE BRILLANTI g**  
**150**



**Safety Data Sheet dated 21/12/2020, version 6**

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

1.1. Product identifier

Mixture identification:

Trade name: PETRONAS Durance CROMATURE BRILLANTI g 150

Trade code: 8568

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

Recommended use:

Bodywork polish

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

Centro Antiveleni di Pavia IRCCS- Fondazione Maugeri tel. +39 (0)382 24444 (h24; it, en)

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

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**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.

⚠ Warning, Eye Irrit. 2, Causes serious eye irritation.

Aquatic Chronic 3, Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

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

P102 Keep out of reach of children.

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P103 Read carefully and follow all instructions.  
P264 Wash hands thoroughly after handling.  
P273 Avoid release to the environment.  
P501 Dispose of contents/container in accordance with applicable regulations.

Special Provisions:

None

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

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### 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:

>= 15% - < 20% Kerosine (petroleum)

REACH No.: 01-2119485517-27, CAS: 8008-20-6, EC: 232-366-4

⚠ 2.6/3 Flam. Liq. 3 H226

⚠ 3.10/1 Asp. Tox. 1 H304

⚠ 3.8/3 STOT SE 3 H336

⚠ 3.2/2 Skin Irrit. 2 H315

⚠ 4.1/C2 Aquatic Chronic 2 H411

>= 1% - < 2% 2-aminoethanol; ethanolamine

REACH No.: 01-2119486455-28, Index number: 603-030-00-8, CAS: 141-43-5, EC: 205-483-3

⚠ 3.2/1B Skin Corr. 1B H314

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.1/4/Dermal Acute Tox. 4 H312

⚠ 3.1/4/Inhal Acute Tox. 4 H332

⚠ 3.8/3 STOT SE 3 H335

4.1/C3 Aquatic Chronic 3 H412

Specific Concentration Limits:

C >= 5%: STOT SE 3 H335

7 ppm Acido acrilico

REACH No.: 01-2119452449-31, CAS: 79-10-7, EC: 201-177-9

⚠ 4.1/A1 Aquatic Acute 1 H400

⚠ 2.6/3 Flam. Liq. 3 H226

⚠ 3.1/4/Oral Acute Tox. 4 H302

⚠ 3.2/1A Skin Corr. 1A H314

⚠ 3.1/4/Inhal Acute Tox. 4 H332

⚠ 3.1/3/Dermal Acute Tox. 3 H311

⚠ 3.8/3 STOT SE 3 H335

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#### 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.

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 ophthalmologist immediately.

Protect uninjured eye.

###### In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

###### In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

##### 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

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#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

Appropriate Extinguishing Media:

To carbon dioxide.

To dust.

Foam

Water spray.

Not Recommended Extinguishing Media:

Do not use direct water jets.

##### 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.

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#### SECTION 6: Accidental release measures

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

Wear personal protection equipment.

Remove persons to safety.

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

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- Wash with plenty of water.
- 6.4. Reference to other sections  
See also section 8 and 13

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## SECTION 7: Handling and storage

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

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## SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters  
Kerosine (petroleum) - CAS: 8008-20-6  
ACGIH - TWA(8h): 200 mg/m<sup>3</sup> - Notes: (P), Skin, A3 - Skin and URT irr, CNS impair  
2-aminoethanol; ethanolamine - CAS: 141-43-5  
20101.11 - TWA: 7.6 mg/m<sup>3</sup>, 3 ppm  
EU - TWA(8h): 2.5 mg/m<sup>3</sup>, 1 ppm - STEL: 7.6 mg/m<sup>3</sup>, 3 ppm - Notes: Skin  
ACGIH - TWA(8h): 3 ppm - STEL: 6 ppm - Notes: Eye and skin irr  
Acido acrilico - CAS: 79-10-7  
EU - TWA(8h): 29 mg/m<sup>3</sup>, 10 ppm - STEL: 59 mg/m<sup>3</sup>, 20 ppm - Notes: STEL duration: 1 min  
ACGIH - TWA(8h): 2 ppm - Notes: Skin, A4 - URT irr
- DNEL Exposure Limit Values  
2-aminoethanol; ethanolamine - CAS: 141-43-5  
Consumer: 2 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term, local effects  
Consumer: 0.24 mg/kg - Exposure: Human Dermal - Frequency: Long Term (repeated)  
Consumer: 3.75 mg/kg - Exposure: Human Oral - Frequency: Long Term (repeated)  
Worker Professional: 3.3 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term (repeated)  
Worker Professional: 1 mg/kg - Exposure: Human Dermal - Frequency: Long Term (repeated)
- PNEC Exposure Limit Values  
2-aminoethanol; ethanolamine - CAS: 141-43-5  
Target: Fresh Water - Value: 0.08 mg/l  
Target: 08 - Value: 0.02 mg/l  
Target: Marine water - Value: 0 mg/l  
Target: Freshwater sediments - Value: 0.42 mg/kg  
Target: Marine water sediments - Value: 0.04 mg/kg
- 8.2. Exposure controls  
Eye protection:  
Eye glasses with side protection.  
Compliant with EN 166  
Protection for skin:

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No special precaution must be adopted for normal use.

Protection for hands:  
Nitrile or Viton gloves.  
Compliant with EN 374.

Respiratory protection:  
Not needed for normal use.

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:
Appearance and colour:	Paste , White	--	--
Odour:	Characteristic	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	N.A.	--	--
Flash point:	non sostiene la combustione	Regulation (EC) No. 440/2008, Annex, A.10	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	N.A.	--	--
Vapour density:	N.A.	--	--
Relative density:	1.430	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--

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Auto-ignition temperature:	N.A.	--	--	<b>PETRONAS</b>
Decomposition temperature:	N.A.	--	--	
Viscosity:	N.A.	--	--	
Explosive properties:	N.A.	--	--	
Oxidizing properties:	N.A.	--	--	

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

NA=not applicable

## 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 toxicological effects  
Toxicological information of the product:  
PETRONAS Durance CROMATURE BRILLANTI g 150
  - 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 Irrit. 2 H319
  - d) respiratory or skin sensitisation  
Not classified  
Based on available data, the classification criteria are not met

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- 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  
Not classified  
Based on available data, the classification criteria are not met
  - 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-aminoethanol; ethanolamine - CAS: 141-43-5
- a) acute toxicity:  
Test: LD50 - Route: Oral - Species: Rat = 1515 mg/kg  
Test: LD50 - Route: Skin - Species: Rat = 2504 mg/kg  
Test: LC50 - Route: Inhalation - Species: Rat = 1.48 mg/l - Duration: 4h
  - b) skin corrosion/irritation:  
Test: Eye Corrosive Positive - Notes: due to physical-chemical data (pH = 13)  
Test: Skin Corrosive Positive - Notes: due to physical-chemical data (pH = 13)

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## SECTION 12: Ecological information

- 12.1. Toxicity  
Adopt good working practices, so that the product is not released into the environment.  
Kerosine (petroleum) - CAS: 8008-20-6
  - a) Aquatic acute toxicity:  
Endpoint: EL50 - Species: Daphnia > 1 mg/l - Duration h: 48  
Endpoint: EL50 - Species: Algae > 1 mg/l - Duration h: 72  
Endpoint: LL50 - Species: Fish > 1 mg/l - Duration h: 96
- 2-aminoethanol; ethanolamine - CAS: 141-43-5
  - a) Aquatic acute toxicity:  
Endpoint: LC50 - Species: Fish = 349 mg/l - Duration h: 96  
Endpoint: EC50 - Species: Daphnia = 65 mg/l - Duration h: 48  
Endpoint: EC50 - Species: Algae = 2.5 mg/l - Duration h: 72
- 12.2. Persistence and degradability  
None  
Kerosine (petroleum) - CAS: 8008-20-6  
Biodegradability: 4 - Duration: 28gg - %: 60
- 12.3. Bioaccumulative potential  
N.A.
- 12.4. Mobility in soil  
N.A.
- 12.5. Results of PBT and vPvB assessment  
vPvB Substances: None - PBT Substances: None
- 12.6. Other adverse effects  
None

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**SECTION 13: Disposal considerations**

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

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**SECTION 14: Transport information**

14.1. UN 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-Environmental Pollutant: No

IMDG-Marine pollutant: No

14.6. Special precautions for user

N.A.

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

No

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**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) 2015/830

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)

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

Restriction 40

Restrictions related to the substances contained:

No restriction.

Pronto all'Uso

Volatile Organic compounds - VOCs = 1.89 %

8568/6

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Volatile Organic compounds - VOCs = 18.90 g/Kg

Volatile CMR substances = 0.00 %

Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %

Organic Carbon - C = 0.00

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:

2-aminoethanol; ethanolamine

### SECTION 16: Other information

Text of phrases referred to under heading 3:

H226 Flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

H315 Causes skin irritation.

H411 Toxic to aquatic life with long lasting effects.

H314 Causes severe skin burns and eye damage.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

H311 Toxic in contact with skin.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 3	3.1/3/Dermal	Acute toxicity (dermal), Category 3
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
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Corr. 1A	3.2/1A	Skin corrosion, Category 1A
Skin Corr. 1B	3.2/1B	Skin corrosion, Category 1B
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2

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STOT SE 3	3.8/3	Specific target organ toxicity - single exposure Category 3
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

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Paragraphs modified from the previous revision:

SECTION 2: Hazards identification  
SECTION 15: Regulatory information

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

<b>Classification according to Regulation (EC) Nr. 1272/2008</b>	<b>Classification procedure</b>
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Aquatic Chronic 3, H412	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"

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	(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, 10/07/2019

Substance identity	
Chemical name	2-Aminoetanolo
CAS No.	141-43-5
EINECS No.	205-483-3

### Table of contents

1. **ES 1** Consumer use; Washing and cleaning products (PC35)
2. **ES 2** Widespread use by professional workers; Washing and cleaning products (PC35)
3. **ES 3** Use at industrial site; Polymer preparations and compounds (PC32)

1. ES 1 Consumer use; Washing and cleaning products (PC35)	
1.1 TITLE SECTION	
Exposure Scenario name	Consumer goods
Date - Version	10/07/2019 - 1.0
Life Cycle Stage	Consumer use
Main user group	Consumer uses
Sector(s) of use	Consumer uses (SU21)
Product Categories	Washing and cleaning products (PC35)
Environment Contributing Scenario	
CS1 Water-based process	ERC8d
Consumer Contributing Scenario	
CS2 Detergent liquids	PC35
1.2 Conditions of use affecting exposure	
1.2. CS1: Environment Contributing Scenario: Water-based process (ERC8d)	
Environmental release categories	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d)
<i>Amount used, frequency and duration of use (or from service life)</i>	
<b>Amounts used:</b> Annual amount per site 60000000 kg	
<b>Release type:</b> Continuous release	
<b>Emission days:</b> 365 days per year	
<i>Conditions and measures related to treatment of waste (including article waste)</i>	
<b>Waste treatment</b>	
Contain and dispose of waste according to local regulations.	Waste - minimum efficiency of: 87 %
<i>Other conditions affecting environmental exposure</i>	
<b>Local marine water dilution factor:</b> 100 <b>Local freshwater dilution factor:</b> 10 <b>Receiving surface water flow:</b> 18000 m <sup>3</sup> /day Covers indoor and outdoor use	
1.2. CS2: Consumer Contributing Scenario: Detergent liquids (PC35)	
Product Categories	Washing and cleaning products (PC35)
<i>Product (article) characteristics</i>	
<b>Vapour pressure:</b> 0.539 hPa	
<b>Concentration of substance in product:</b> Covers concentrations up to 5 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Application duration 0.3 min	

**Frequency:**

Covers exposure up to 365 days per year

**Duration:**

Exposure duration 0.75 min

**Information and behavioural advice for consumers****Information and behavioural advice for consumers:**

Avoid contact with eyes

**Other conditions affecting consumers exposure****Room size:** Covers use in room size of 1 m<sup>3</sup>**Ventilation rate:** Covers use under typical household ventilation.**Body parts exposed:**

Palm of one hand Hands and forearms

**1.3 Exposure estimation and reference to its source****1.3. CS1: Environment Contributing Scenario: Water-based process (ERC8d)**

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	9.6 kg/d	ECETOC TRA environment v2.0	0.514

**1.2. CS2: Consumer Contributing Scenario: Detergent liquids (PC35)**

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
inhalative, systemic, long-term	0.01 mg/m <sup>3</sup>	N/A	0.01
inhalative, systemic, short-term	0.01 mg/m <sup>3</sup>	N/A	0.01
dermal, systemic, long-term	0.008 mg/kg KW	N/A	0.03
dermal, systemic, long-term	0.002 mg/kg KW	N/A	0.01
oral, systemic, long-term	0.002 mg/kg KW	N/A	0.01

**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

## Widespread use by professional workers; Washing and cleaning products (PC35)

## 2.1 TITLE SECTION

Exposure Scenario name	Cleaning agent
Date - Version	10/07/2019 - 1.0
Life Cycle Stage	Widespread use by professional workers
Main user group	Professional uses
Sector(s) of use	Professional uses (SU22)
Product Categories	Washing and cleaning products (PC35)

## Environment Contributing Scenario

CS1 Water-based process	ERC8d
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## Worker Contributing Scenario

CS2 Cleaning	PROC3
CS3 Cleaning	PROC8a
CS4 Cleaning	PROC10
CS5 Cleaning	PROC7 - PROC11
CS6 Cleaning	PROC13
CS7 Cleaning	PROC19

## 2.2 Conditions of use affecting exposure

## 2.2. CS1: Environment Contributing Scenario: Water-based process (ERC8d)

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

## Physical form of product:

Liquid

## Concentration of substance in product:

Covers concentrations up to 10 %

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

## Amounts used:

Annual amount per site 65000000 kg

## Release type: Continuous release

## Emission days: 220 days per year

*Conditions and measures related to sewage treatment plant*

## STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87 %

## Additional information on STP:

Acclimated biological treatment

## STP sludge treatment:

<b>STP effluent (m<sup>3</sup>/day):</b> 2300	
<i>Conditions and measures related to treatment of waste (including article waste)</i>	
<b>Waste treatment</b> Product residual disposal complies with applicable regulations.	
<i>Other conditions affecting environmental exposure</i>	
<b>Local marine water dilution factor:</b> 100 <b>Local freshwater dilution factor:</b> 10 <b>Receiving surface water flow:</b> 1800 m <sup>3</sup> /day Covers indoor and outdoor use	
<b>2.2. CS2: Worker Contributing Scenario: Cleaning (PROC3)</b>	
<b>Process Categories</b>	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid  <b>Vapour pressure:</b> 0.539 hPa  <b>Concentration of substance in product:</b> Covers concentrations up to 10 %	
<i>Amount used, frequency and duration of use/exposure</i>	
<b>Duration:</b> Covers daily exposures up to 8 hours <b>Frequency:</b> Covers use up to 240 days per year	
<i>Technical and organisational conditions and measures</i>	
<b>Technical and organisational measures</b> Ensure that direct skin contact is avoided.	
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>	
<b>Personal protection</b>	
Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable respiratory protection.	Dermal - minimum efficiency of: 90 %
Use suitable eye protection.	
<i>Other conditions affecting worker exposure</i>	
Indoor use	
<b>Ventilation rate:</b> Provide forced ventilation 80 %	
<i>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.</i>	
<b>Additional Good Practice Advice:</b> Ensure regular inspection, cleaning and maintenance of equipment and machines.	
<b>2.2. CS3: Worker Contributing Scenario: Cleaning (PROC8a)</b>	
<b>Process Categories</b>	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC8a)
<i>Product (article) characteristics</i>	
<b>Physical form of product:</b> Liquid	



**Vapour pressure:**

0.539 hPa

**Concentration of substance in product:**

Covers concentrations up to 10 %

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Covers use up to 240 days per year

*Technical and organisational conditions and measures***Technical and organisational measures**

Ensure that direct skin contact is avoided.

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

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable respiratory protection.	Dermal - minimum efficiency of: 90 %
Use suitable eye protection.	

*Other conditions affecting worker exposure*

Indoor use

**Ventilation rate:** Provide forced ventilation 80 %*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.***Additional Good Practice Advice:**

Ensure regular inspection, cleaning and maintenance of equipment and machines.

**2.2. CS4: Worker Contributing Scenario: Cleaning (PROC10)****Process Categories**

Roller application or brushing (PROC10)

*Product (article) characteristics***Physical form of product:**

Liquid

**Vapour pressure:**

0.539 hPa

**Concentration of substance in product:**

Covers concentrations up to 10 %

*Amount used, frequency and duration of use/exposure***Duration:**

Covers daily exposures up to 8 hours

**Frequency:**

Covers use up to 240 days per year

*Technical and organisational conditions and measures***Technical and organisational measures**

Ensure that direct skin contact is avoided.

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

## Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable respiratory protection.	Dermal - minimum efficiency of: 90 %
Use suitable eye protection.	

## Other conditions affecting worker exposure

Indoor use

**Ventilation rate:** Provide forced ventilation 80 %

*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

### Additional Good Practice Advice:

Ensure regular inspection, cleaning and maintenance of equipment and machines.

## 2.2. CS5: Worker Contributing Scenario: Cleaning (PROC7, PROC11)

Process Categories	Industrial spraying - Non industrial spraying (PROC7, PROC11)
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## Product (article) characteristics

### Physical form of product:

Liquid

### Vapour pressure:

0.539 hPa

### Concentration of substance in product:

Covers concentrations up to 10 %

## Amount used, frequency and duration of use/exposure

### Duration:

Covers daily exposures up to 8 hours

### Frequency:

Covers use up to 240 days per year

## Technical and organisational conditions and measures

### Technical and organisational measures

Ensure that direct skin contact is avoided.

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

## Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable respiratory protection.	Dermal - minimum efficiency of: 90 %
Use suitable eye protection.	

## Other conditions affecting worker exposure

Indoor use

**Ventilation rate:** Provide forced ventilation 80 %

*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

### Additional Good Practice Advice:

Ensure regular inspection, cleaning and maintenance of equipment and machines.

## 2.2. CS6: Worker Contributing Scenario: Cleaning (PROC13)

<b>Process Categories</b>	Treatment of articles by dipping and pouring (PROC13)		
<i>Product (article) characteristics</i>			
<b>Physical form of product:</b> Liquid			
<b>Vapour pressure:</b> 0.539 hPa			
<b>Concentration of substance in product:</b> Covers concentrations up to 10 %			
<i>Amount used, frequency and duration of use/exposure</i>			
<b>Duration:</b> Covers daily exposures up to 8 hours			
<b>Frequency:</b> Covers use up to 240 days per year			
<i>Technical and organisational conditions and measures</i>			
<b>Technical and organisational measures</b> Ensure that direct skin contact is avoided.			
<i>Conditions and measures related to personal protection, hygiene and health evaluation</i>			
<b>Personal protection</b>			
Wear suitable gloves tested to EN374.		Dermal - minimum efficiency of: 98 %	
Wear suitable respiratory protection.		Dermal - minimum efficiency of: 90 %	
Use suitable eye protection.			
<i>Other conditions affecting worker exposure</i>			
Indoor use			
<b>Ventilation rate:</b> Provide forced ventilation 80 %			
<i>Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.</i>			
<b>Additional Good Practice Advice:</b> Ensure regular inspection, cleaning and maintenance of equipment and machines.			
<b>2.2. CS7: Worker Contributing Scenario: Cleaning (PROC19)</b>			
<b>Process Categories</b>	Manual activities involving hand contact (PROC19)		
<i>Product (article) characteristics</i>			
<b>Physical form of product:</b> Liquid			
<b>Vapour pressure:</b> 0.539 hPa			
<b>Concentration of substance in product:</b> Covers concentrations up to 10 %			
<i>Amount used, frequency and duration of use/exposure</i>			
<b>Duration:</b> Covers daily exposures up to 8 hours			
<b>Frequency:</b> Covers use up to 240 days per year			
<i>Technical and organisational conditions and measures</i>			

## Technical and organisational measures

Ensure that direct skin contact is avoided.

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

### Personal protection

Wear suitable gloves tested to EN374.	Dermal - minimum efficiency of: 98 %
Wear suitable respiratory protection.	Dermal - minimum efficiency of: 90 %
Use suitable eye protection.	

### Other conditions affecting worker exposure

Indoor use

**Ventilation rate:** Provide forced ventilation 80 %

*Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.*

### Additional Good Practice Advice:

Ensure regular inspection, cleaning and maintenance of equipment and machines.

## 2.3 Exposure estimation and reference to its source

### 2.3. CS1: Environment Contributing Scenario: Water-based process (ERC8d)

protection target	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
freshwater	9343 kg/d	ECETOC TRA environment v2.0	0.482

### 2.3. CS2: Worker Contributing Scenario: Cleaning (PROC3)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.01 mg/kg KW	ECETOC TRA worker v2.0	0.01
inhalative, systemic, long-term	0.15 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.05
inhalative, systemic, short-term	0.15 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.05

### 2.3. CS3: Worker Contributing Scenario: Cleaning (PROC8a)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.03 mg/kg KW	ECETOC TRA worker v2.0	0.03
inhalative, systemic, long-term	1.27 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.39

### 2.3. CS4: Worker Contributing Scenario: Cleaning (PROC10)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.05 mg/kg KW	ECETOC TRA worker v2.0	0.05

inhalative, systemic, long-term	0.76 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.23
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### 2.3. CS5: Worker Contributing Scenario: Cleaning (PROC7, PROC11)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.21 mg/kg KW	ECETOC TRA worker v2.0	0.21
inhalative, systemic, long-term	1.53 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.46

### 2.3. CS6: Worker Contributing Scenario: Cleaning (PROC13)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.03 mg/kg KW	ECETOC TRA worker v2.0	0.03
inhalative, systemic, long-term	0.25 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.08

### 2.3. CS7: Worker Contributing Scenario: Cleaning (PROC19)

Exposure route, Health effect, Exposure indicator	Exposure level	Calculation method	Risk Characterization Ratio (RCR)
dermal, systemic, long-term	0.28 mg/kg KW	ECETOC TRA worker v2.0	0.28
inhalative, systemic, long-term	0.38 mg/m <sup>3</sup>	ECETOC TRA worker v2.0	0.12

## 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; Polymer preparations and compounds (PC32)

## 3.1 TITLE SECTION

Exposure Scenario name	Additive
Date - Version	10/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses
Product Categories	Polymer preparations and compounds (PC32)

## Environment Contributing Scenario

CS1 Solvent-based process	ERC5
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## Worker Contributing Scenario

CS2 Additive	PROC14
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## 3.2 Conditions of use affecting exposure

## 3.2. CS1: Environment Contributing Scenario: Solvent-based process (ERC5)

Environmental release categories	Use at industrial site leading to inclusion into/onto article (ERC5)
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*Product (article) characteristics***Concentration of substance in product:**

Covers percentage substance in the product up to 100 %.

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

Annual amount per site 6720000 kg

**Release type:** Continuous release**Emission days:** 365 days per year*Conditions and measures related to sewage treatment plant***STP type:**

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 87 %

**Additional information on STP:**

Biological elimination

**STP sludge treatment:**

No application of sewage sludge to soil

**STP effluent (m<sup>3</sup>/day):** 2300*Conditions and measures related to treatment of waste (including article waste)***Waste treatment**

Do not apply industrial sludge to natural soils.

*Other conditions affecting environmental exposure***Local marine water dilution factor:** 100**Local freshwater dilution factor:** 10**Receiving surface water flow:** 18000 m<sup>3</sup>/day

## 3.2. CS2: Worker Contributing Scenario: Additive (PROC14)

<b>Process Categories</b>	Tabletting, compression, extrusion, pelletisation, granulation (PROC14)		
<b>Product (article) characteristics</b>			
<b>Physical form of product:</b> Liquid			
<b>Vapour pressure:</b> 0.539 hPa			
<b>Concentration of substance in product:</b> Covers percentage substance in the product up to 100 %.			
<b>Amount used, frequency and duration of use/exposure</b>			
<b>Duration:</b> Covers use up to 480 min			
<b>Frequency:</b> Covers frequency up to: 240 days per year			
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>			
<b>Personal protection</b>			
Use suitable eye protection.			
Wear suitable gloves tested to EN374.		Inhalation - minimum efficiency of: 90 %	
<b>Other conditions affecting worker exposure</b>			
Indoor use			
<b>Ventilation rate:</b> Provide forced ventilation 90 %			
<b>3.3 Exposure estimation and reference to its source</b>			
<b>3.3. CS1: Environment Contributing Scenario: Solvent-based process (ERC5)</b>			
<b>protection target</b>	<b>Exposure level</b>	<b>Calculation method</b>	<b>Risk Characterization Ratio (RCR)</b>
freshwater	6.28 kg/d	N/A	N/A
<b>3.3. CS2: Worker Contributing Scenario: Additive (PROC14)</b>			
<b>Exposure route, Health effect, Exposure indicator</b>	<b>Exposure level</b>	<b>Calculation method</b>	<b>Risk Characterization Ratio (RCR)</b>
dermal, systemic, long-term	0.07 mg/kg bw/day	ECETOC TRA worker v3	0.07
inhalative, systemic, long-term	1.27 mg/m <sup>3</sup>	ECETOC TRA worker v3	0.39
inhalative, local, long-term	1.27 mg/m <sup>3</sup>	ECETOC TRA worker v3	0.39
<b>3.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES</b>			
<b>Guidance to check compliance with the exposure scenario:</b> Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.			