

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF




Safety Data Sheet dated 1/7/2024, version 10

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

- 1.1. Product identifier  
Mixture identification:  
Trade name: PETRONAS DURANCE VISOR RAIN OFF  
Trade code: 8581
- 1.2. Relevant identified uses of the substance or mixture and uses advised against  
Recommended use:  
water-repellent for glare-shields
- 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: emergency number 112  
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):  
⚠ Danger, Flam. Liq. 2, Highly flammable liquid and vapour.  
⚠ Warning, Skin Irrit. 2, Causes skin irritation.  
⚠ Warning, Eye Irrit. 2, Causes serious eye irritation.  
⚠ Warning, STOT SE 3, May cause drowsiness or dizziness.  
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:  

- Danger  
Hazard statements:  
H225 Highly flammable liquid and vapour.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements:  
P101 If medical advice is needed, have product container or label at hand.

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



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P102 Keep out of reach of children.  
 P103 Read carefully and follow all instructions.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P271 Use only outdoors or in a well-ventilated area.  
 P370+P378 In case of fire: Use foam for alcohols to extinguish.  
 P403+P235 Store in a well-ventilated place. Keep cool.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with applicable regulations.

**Special Provisions:**

PACK2 The packing must have tactile indications of danger for blind people.

**Contains**

propan-2-ol; isopropyl alcohol; isopropanol  
 Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

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  $\geq 0.1\%$

**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:

stta	Name	Ident. Number	Classification
$\geq 80\%$ - $< 90\%$	propan-2-ol; isopropyl alcohol; isopropanol	Index number: 603-117-00-0 CAS: 67-63-0 EC: 200-661-7 REACH No.: 01-2119457558-25	⚠ 2.6/2 Flam. Liq. 2 H225 ⚠ 3.3/2 Eye Irrit. 2 H319 ⚠ 3.8/3 STOT SE 3 H336
$\geq 15\%$ - $< 20\%$	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	EC: 927-510-4 REACH No.: 01-2119475515-33	⚠ 2.6/2 Flam. Liq. 2 H225 ⚠ 3.10/1 Asp. Tox. 1 H304 ⚠ 3.2/2 Skin Irrit. 2 H315 ⚠ 3.8/3 STOT SE 3 H336 ⚠ 4.1/C2 Aquatic Chronic 2 H411 EUH066

### 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.

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



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- 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 all sources of ignition.  
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  
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

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



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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

Always keep in a well ventilated place.

Store at below 50 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.

Keep away from food, drink and feed.

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

### 7.3. Specific end use(s)

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

20101.11 - TWA: 983 mg/m<sup>3</sup>, 400 ppm

20101.12 - TWA: 492 mg/m<sup>3</sup>, 200 ppm

ACGIH - TWA(8h): 200 ppm - STEL: 400 ppm - Notes: A4, BEI - Eye and URT irr, CNS impair

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

EU

### DNEL Exposure Limit Values

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

Worker Professional: 888 mg/kg - Consumer: 319 mg/kg - Exposure: Human Dermal - Frequency: Long Term (repeated)

Worker Professional: 500 mg/m<sup>3</sup> - Consumer: 89 mg/m<sup>3</sup> - Exposure: Human Inhalation - Frequency: Long Term (repeated)

Consumer: 26 mg/kg - Exposure: Human Oral - Frequency: Long Term (repeated)

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Worker Professional: 300 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 508 ppm - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Consumer: 149 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 109 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 149 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

### PNEC Exposure Limit Values

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

Target: Fresh Water - Value: 140.9 mg/l

Target: Fresh Water - Value: 140.9 mg/l

Target: Freshwater sediments - Value: 552 mg/l

Target: Soil (agricultural) - Value: 28 mg/kg

Target: Microorganisms in sewage treatments - Value: 2251 mg/l

### 8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Compliant with EN 166

## Safety Data Sheet

### PETRONAS DURANCE VISOR RAIN OFF



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Protection for skin:  
No special precaution must be adopted for normal use.

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

Respiratory protection:  
Use adequate protective respiratory equipment.

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:	Alcolico	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	Flam. Liq. 2, H225	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	3,2°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	0,776 g/ml ca	--	--

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



density:				<b>PETRONAS</b>
Relative vapour density:	N.A.	--	--	
Particle characteristics:				
Particle size:	N.A.	--	--	

- 9.2. Other information  
No other relevant information

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### 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
- 10.4. Conditions to avoid  
Stable under normal conditions.
- 10.5. Incompatible materials  
Avoid contact with combustible materials. The product could catch fire.
- 10.6. Hazardous decomposition products  
None.

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### SECTION 11: Toxicological information

- 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological information of the product:

PETRONAS DURANCE VISOR RAIN OFF

- 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
- 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 H336
- 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

## Safety Data Sheet

### PETRONAS DURANCE VISOR RAIN OFF



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Toxicological information of the main substances found in the product:

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 5840 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit = 16.4 ml/kg

Test: LC50 - Route: Inhalation - Species: Rat > 10000 Ppm - Duration: 6h

g) reproductive toxicity:

Test: NOAEL(C) - Route: Oral - Species: Rabbit 480 mg/kg

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

a) acute toxicity:

Test: LC50 - Route: Inhalation - Species: Rat > 23.3 mg/l - Duration: 4h

Test: LD50 - Route: Oral - Species: Rat > 8 ml/kg

Test: LD50 - Route: Skin - Species: Rabbit 2800-3100 mg/kg

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq$  0.1%

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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.

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 9640 mg/l - Duration h: 96

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 48

Endpoint: EC50 - Species: Daphnia > 10000 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae > 1800 mg/l - Duration h: 72

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

b) Aquatic chronic toxicity:

Endpoint: EC50 - Species: Algae > 10-30 mg/l - Duration h: 72

Endpoint: LC50 - Species: Fish > 13.4 mg/l - Duration h: 96

12.2. Persistence and degradability

None

propan-2-ol; isopropyl alcohol; isopropanol - CAS: 67-63-0

Biodegradability: Readily biodegradable - Duration: .10gg - %: 70

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. Endocrine disrupting properties

No endocrine disruptor substances present in concentration  $\geq$  0.1%

12.7. Other adverse effects

None

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## 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.

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## SECTION 14: Transport information

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



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- 14.1. UN number or ID number  
ADR-UN Number: 1993  
IATA-UN Number: 1993  
IMDG-UN Number: 1993
- 14.2. UN proper shipping name  
ADR-Shipping Name: FLAMMABLE LIQUID, N.O.S.(propan-2-ol; isopropyl alcohol; isopropanol, Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics)  
IATA-Shipping Name: FLAMMABLE LIQUID, N.O.S.(propan-2-ol; isopropyl alcohol; isopropanol, Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics)  
IMDG-Shipping Name: FLAMMABLE LIQUID, N.O.S.(propan-2-ol; isopropyl alcohol; isopropanol, Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics)
- 14.3. Transport hazard class(es)  
ADR-Class: 3  
ADR - Hazard identification number: 33  
IATA-Class: 3  
IATA-Label: 3  
IMDG-Class: 3
- 14.4. Packing group  
ADR-Packing Group: II  
IATA-Packing group: II  
IMDG-Packing group: II
- 14.5. Environmental hazards  
ADR-Environmental Pollutant: No  
IMDG-Marine pollutant: No  
IMDG-EmS: F-E,  
[S-  
E]
- 14.6. Special precautions for user  
ADR-Subsidiary hazards: -  
ADR-S.P.: 274 601 640D  
ADR-Transport category (Tunnel restriction code): 2 (D/E)  
IATA-Passenger Aircraft: 353  
IATA-Subsidiary hazards: -  
IATA-Cargo Aircraft: 364  
IATA-S.P.: A3  
IATA-ERG: 3H  
IMDG-Subsidiary hazards: -  
IMDG-Stowage and handling: Category B  
IMDG-Segregation: -
- 14.7. Maritime transport in bulk according to IMO instruments  
N.A.  
Limited Quantity: 1 L  
Exempted Quantity: E2

### 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



# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



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)  
Regulation (EU) n. 2021/849 (ATP 17 CLP)  
Regulation (EU) n. 2022/692 (ATP 18 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:

Restriction 75

Volatile Organic compounds - VOCs = 99.00 %

Volatile Organic compounds - VOCs = 990.00 g/Kg

Volatile Organic compounds - VOCs = 768.24 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

Product belongs to category: P5c

### 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:

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H411 Toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

Hazard class and hazard category	Code	Description
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2

# Safety Data Sheet

## PETRONAS DURANCE VISOR RAIN OFF



Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1	<b>PETRONAS</b>
Skin Irrit. 2	3.2/2	Skin irritation, Category 2	
Eye Irrit. 2	3.3/2	Eye irritation, Category 2	
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3	
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	

This safety data sheet has been completely updated in compliance to Regulation 2020/878. 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
Flam. Liq. 2, H225	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
STOT SE 3, H336	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

## Safety Data Sheet

### PETRONAS DURANCE VISOR RAIN OFF



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	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, 17/07/2019

## Substance identity

<b>Chemical name</b>	Heptane HYDROCARBONS C7, N-ALKANES, ISOALKANES, CYCLICS
<b>EINECS No.</b>	927-510-4

## Table of contents

1. **ES 1** Use at industrial site
2. **ES 2** Widespread use by professional workers
3. **ES 3** Use at industrial site
4. **ES 4** Widespread use by professional workers

## 1. ES 1 Use at industrial site

### 1.1 TITLE SECTION

Exposure Scenario name	Use in coatings
Date - Version	17/07/2019 - 1.0
Life Cycle Stage	Use at industrial site
Main user group	Industrial uses

#### Environment Contributing Scenario

CS1 Covered by	ERC4
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#### Worker Contributing Scenario

CS2 Industrial	PROC5 - PROC1 - PROC2 - PROC3 - PROC4 - PROC7 - PROC8a - PROC8b - PROC9 - PROC10 - PROC13 - PROC14 - PROC15
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## 1.2 Conditions of use affecting exposure

### 1.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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#### *Amount used, frequency and duration of use (or from service life)*

##### Amounts used:

Annual site tonnage 400 t(tonnes)/year

Daily amount per site 20000 kg/day

**Maximum allowable site tonnage (MSafe):** 62000 kg/day

**Release type:** Continuous release

**Emission days:** 20 days per year

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

##### Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 90 %
No discharge of substance into waste water	Water - minimum efficiency of: 88.2 %

#### *Conditions and measures related to sewage treatment plant*

##### STP type:

Municipal Sewage Treatment Plant

Water - minimum efficiency of: = 96.2 %

**STP effluent (m<sup>3</sup>/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: Industrial (PROC5, PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15)**

**Process Categories**

Mixing or blending in batch processes - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - 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 - Chemical production where opportunity for exposure arises - 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 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing) - Roller application or brushing - Treatment of articles by dipping and pouring - Tableting, compression, extrusion, pelletisation, granulation - Use as laboratory reagent (PROC5, PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15)

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

Liquid

**Vapour pressure:**

&lt; 20 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**

- Remove spills immediately
- Ensure operatives are trained to minimise exposures.
- Store substance within a closed system.

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

- Wear suitable gloves tested to EN374.
- Wear suitable face shield.
- Use suitable eye protection.

**1.3 Exposure estimation and reference to its source****1.3. CS1: Environment Contributing Scenario: Covered by (ERC4)**

Release route	Release rate	Release estimation method
Air	98 %	N/A
Water	0.07 %	N/A
soil	0 %	N/A

**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

### 2.1 TITLE SECTION

Exposure Scenario name	Use in coatings
Date - Version	17/07/2019 - 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 Covered by	ERC8a - ERC8d
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#### Worker Contributing Scenario

CS2 General use from professional operators	PROC5 - PROC1 - PROC2 - PROC3 - PROC4 - PROC8a - PROC8b - PROC10 - PROC11 - PROC13 - PROC15 - PROC19
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## 2.2 Conditions of use affecting exposure

### 2.2. CS1: Environment Contributing Scenario: Covered by (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)
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#### *Amount used, frequency and duration of use (or from service life)*

##### Amounts used:

Annual site tonnage 0.15 t(tonnes)/year  
Daily amount per site 0.41 kg/day

**Maximum allowable site tonnage (MSafe):** 1500 kg/day

**Release type:** Continuous release

**Emission days:** 365 days per year

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

##### Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):  
Prevent discharge of undissolved substance to or recover from onsite wastewater.

#### *Conditions and measures related to sewage treatment plant*

##### STP type:

Municipal Sewage Treatment Plant  
Water - minimum efficiency of: = 96.2 %

**STP effluent (m<sup>3</sup>/day):** 2000

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

##### Waste treatment

Do not apply industrial sludge to natural soils.  
Product residual disposal complies with applicable regulations.

#### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

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

**Additional Good Practice Advice:**

Do not use sludge as fertiliser.

**2.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC5, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19)**
**Process Categories**

Mixing or blending in batch processes - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - 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 - Chemical production where opportunity for exposure arises - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Roller application or brushing - Non industrial spraying - Treatment of articles by dipping and pouring - Use as laboratory reagent - Manual activities involving hand contact (PROC5, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19)

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

Liquid

**Vapour pressure:**

< 20 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 in contained systems  
Ensure operatives are trained to minimise exposures.  
Carry out in a vented booth or extracted enclosure.

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

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

*Other conditions affecting worker exposure*

**Temperature:** Assumes use at not more than 20 °C above ambient temperature.

**2.3 Exposure estimation and reference to its source**
**2.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)**

Release route	Release rate	Release estimation method
Air	98 %	N/A
soil	1 %	N/A
Water	0.1 %	N/A

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



**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	Use in cleaning agents
Date - Version	17/07/2019 - 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 Covered by	ERC4
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#### Worker Contributing Scenario

CS2 Industrial	PROC1 - PROC2 - PROC3 - PROC4 - PROC7 - PROC8a - PROC8b - PROC10 - PROC13
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### 3.2 Conditions of use affecting exposure

#### 3.2. CS1: Environment Contributing Scenario: Covered by (ERC4)

Environmental release categories	Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)
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#### *Amount used, frequency and duration of use (or from service life)*

##### Amounts used:

Annual site tonnage 74 t(tonnes)/year  
Daily amount per site 3700 kg/day

**Maximum allowable site tonnage (MSafe):** 4600000 kg/day

**Release type:** Continuous release

**Emission days:** 20 days per year

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

##### Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):	Air - minimum efficiency of: 70 %
Prevent discharge of undissolved substance to or recover from onsite wastewater.	

#### *Conditions and measures related to sewage treatment plant*

##### STP type:

Municipal Sewage Treatment Plant  
Water - minimum efficiency of: = 96.2 %

**STP effluent (m<sup>3</sup>/day):** 2000

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

##### Waste treatment

Do not apply industrial sludge to natural soils.  
External treatment and disposal of waste should comply with applicable local and/or national regulations.

#### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

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

**Additional Good Practice Advice:**

Do not apply industrial sludge to natural soils.

**3.2. CS2: Worker Contributing Scenario: Industrial (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13)**

<b>Process Categories</b>	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - 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 - Chemical production where opportunity for exposure arises - 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 - Roller application or brushing - Treatment of articles by dipping and pouring (PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13)
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*Product (article) characteristics*

**Physical form of product:**

Liquid

**Vapour pressure:**

< 20 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**

Remove spills immediately

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.

*Other conditions affecting worker exposure*

**Temperature:** Assumes use at not more than 20 °C above ambient temperature.

**3.3 Exposure estimation and reference to its source**

**3.3. CS1: Environment Contributing Scenario: Covered by (ERC4)**

Release route	Release rate	Release estimation method
Air	1 %	N/A
Water	3E-06 %	N/A
soil	0 %	N/A

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

**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.

## 4. ES 4 Widespread use by professional workers

### 4.1 TITLE SECTION

<b>Exposure Scenario name</b>	Cleaning agent
<b>Date - Version</b>	17/07/2019 - 1.0
<b>Life Cycle Stage</b>	Widespread use by professional workers
<b>Main user group</b>	Professional uses
<b>Sector(s) of use</b>	Professional uses (SU22)

### Environment Contributing Scenario

<b>CS1 Covered by</b>	ERC8a - ERC8d
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### Worker Contributing Scenario

<b>CS2 General use from professional operators</b>	PROC1 - PROC2 - PROC3 - PROC4 - PROC8a - PROC8b - PROC10 - PROC11 - PROC13
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## 4.2 Conditions of use affecting exposure

### 4.2. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

<b>Environmental release categories</b>	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)
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### *Amount used, frequency and duration of use (or from service life)*

#### Amounts used:

Annual site tonnage 0.012 t(tonnes)/year  
Daily amount per site 0.032 kg/day

**Maximum allowable site tonnage (MSafe):** 170 kg/day

**Release type:** Continuous release

**Emission days:** 365 days per year

### *Technical and organisational conditions and measures*

#### Control measures to prevent releases

Treat air emission to provide the required removal efficiency of (%):  
Prevent discharge of undissolved substance to or recover from onsite wastewater.  
Do not apply industrial sludge to natural soils.

### *Conditions and measures related to sewage treatment plant*

#### STP type:

Municipal Sewage Treatment Plant  
Water - minimum efficiency of: = 96.2 %

**STP effluent (m<sup>3</sup>/day):** 2000

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

#### Waste treatment

Do not apply industrial sludge to natural soils.  
External treatment and disposal of waste should comply with applicable local and/or national regulations.

### *Other conditions affecting environmental exposure*

**Local marine water dilution factor:** 100

**Local freshwater dilution factor:** 10

#### 4.2. CS2: Worker Contributing Scenario: General use from professional operators (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13)

<b>Process Categories</b>	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions - 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 - Chemical production where opportunity for exposure arises - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities - Transfer of substance or mixture (charging and discharging) at dedicated facilities - Roller application or brushing - Non industrial spraying - Treatment of articles by dipping and pouring (PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13)
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#### *Product (article) characteristics*

##### **Physical form of product:**

Liquid

##### **Vapour pressure:**

< 20 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**

- Remove spills immediately
- Ensure operatives are trained to minimise exposures.
- Handle substance within a closed system.

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

##### **Personal protection**

Wear suitable gloves tested to EN374.

#### *Other conditions affecting worker exposure*

**Temperature:** Assumes use at not more than 20 °C above ambient temperature.

**Ventilation rate:** Provide forced ventilation

### 4.3 Exposure estimation and reference to its source

#### 4.3. CS1: Environment Contributing Scenario: Covered by (ERC8a, ERC8d)

Release route	Release rate	Release estimation method
Air	2 %	N/A
soil	0 %	N/A
Water	1E-06 %	N/A

### 4.4 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.