This Safety Data Sheet adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

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

1.1. Product identifier

Product name : Rely+On™ Virkon®

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

Use of the Substance/Mixture : Disinfectant

1.3. Details of the supplier of the safety data sheet

Company : Antec International Limited
Windham Road
Chilton Industrial Estate
Sudbury / Suffolk - CO10 2XD
United Kingdom

Telephone : +44 (0) 1787 377 305

Telefax : +44 (0) 1787 310 846

E-mail address : sds-support@che.dupont.com

1.4. Emergency telephone number

Emergency telephone number : +(44)-870-8200418 (CHEMTREC - Recommended)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2. Label elements

Danger

H315	Causes skin irritation.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.
Special labelling of certain substances and mixtures	Contains: Dipotassium peroxodisulphate, Dipentene / EUH208: May produce an allergic reaction.**,**
P102	Keep out of reach of children.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ 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/doctor.
P501	Dispose of container to a waste disposal plant in accordance with local, regional and national legislations.

2.3. Other hazards

no data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Registration number	Classification according to Regulation (EU) 1272/2008 (CLP)	Concentration (% w/w)
Pentapotassium bis(peroxymonosulphate) bis(sulphate) (CAS-No.70693-62-8) (EC-No.274-778-7)		
01-2119485567-22	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 40 - <= 55 %
Sodium C10-13-alkylbenzenesulfonate (CAS-No.68411-30-3) (EC-No.270-115-0)		
	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 10 - <= 12 %
Malic acid (CAS-No.6915-15-7) (EC-No.230-022-8)		
01-2119906954-31	Eye Irrit. 2; H319 STOT SE 3; H335 Acute Tox. 4; H302 Skin Irrit. 2; H315	>= 7 - <= 10 %

Sulphamidic acid (CAS-No.5329-14-6) (EC-No.226-218-8)

	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 4 - <= 6 %

Sodium toluenesulphonate (CAS-No.12068-03-0) (EC-No.235-088-1)

	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - <= 5 %

Dipotassium peroxodisulphate (CAS-No.7727-21-1) (EC-No.231-781-8)

	Ox. Sol. 3; H272 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 Aquatic Chronic 3; H412	< 3 %

Dipentene (CAS-No.138-86-3) (EC-No.205-341-0)

	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	< 0.25 %

The above products are compliant to REACH registration obligations; Registration number(s) may not be provided because substance(s) are exempted, not yet registered under REACH or are registered under another regulatory process (biocide uses, plant protection products), etc.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

Inhalation : Remove from exposure, lie down. If victim has stopped breathing: Artificial respiration and/or oxygen may be necessary. Consult a physician.

Skin contact : Wash off immediately with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Consult a physician.

Eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Ingestion	:	Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

Symptoms	:	Inhalation may provoke the following symptoms:, Irritation, Oedema, Nose bleeding
	:	Skin contact may provoke the following symptoms:, Irritation, Discomfort, Itching, Redness, Swelling of tissue, Allergic reactions, Rash
	:	Eye contact may provoke the following symptoms:, Irritation, Redness, Discomfort, Lachrymation, Pain, Ulceration
	:	Ingestion may provoke the following symptoms:, Irritation, Nausea, Vomiting, Diarrhoea

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

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	The product itself does not burn., Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Extinguishing media which shall not be used for safety reasons	:	Carbon dioxide (CO2)

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
	:	Hazardous decomposition products (see also section 10)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and protective suit.
Further information	:	The product itself does not burn.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Evacuate personnel to safe areas. Use personal protective equipment.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up : Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Avoid moisture. After cleaning, flush away traces with water.

Other information : Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8., For disposal instructions see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Avoid dust formation in confined areas. Do not breathe spray mist. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection see section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Protect from contamination. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Store in original container.

Advice on common storage : Keep away from: Combustible material Strong bases

Other data : Stable under recommended storage conditions.

7.3. Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If sub-section is empty then no values are applicable.

Components with workplace control parameters

Type Form of exposure	Control parameters	Update	Regulatory basis	Remarks

Dust (inhalable and respirable fraction)

Time Weighted Average (TWA): Inhalable dust.	10 mg/m3	12 2011	UK. EH40 Workplace Exposure Limits (WELs)	
Time Weighted Average (TWA): Respirable dust.	4 mg/m3	12 2011	UK. EH40 Workplace Exposure Limits (WELs)	

Derived No Effect Level (DNEL)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)

: Type of Application (Use): Workers
Exposure routes: Skin contact
Health Effect: Acute - systemic effects
Value: 80 mg/kg body weight (bw) /day

: Type of Application (Use): Workers
Exposure routes: Inhalation
Health Effect: Acute - systemic effects
Value: 50 mg/m3

: Type of Application (Use): Workers
Exposure routes: Skin contact
Health Effect: Acute - local effects
Value: 0.449 mg/cm2

: Type of Application (Use): Workers
Exposure routes: Inhalation
Health Effect: Acute - local effects
Value: 50 mg/m3

: Type of Application (Use): Workers
Exposure routes: Skin contact
Health Effect: Long-term - systemic effects
Value: 20 mg/kg body weight (bw) /day

: Type of Application (Use): Workers
Exposure routes: Inhalation
Health Effect: Long-term - systemic effects
Value: 0.28 mg/m3

: Type of Application (Use): Workers
Exposure routes: Inhalation
Health Effect: Long-term - local effects
Value: 0.28 mg/m3

: Type of Application (Use): Consumers
Exposure routes: Skin contact
Health Effect: Acute - systemic effects
Value: 80 mg/kg body weight (bw) /day

: Type of Application (Use): Consumers
Exposure routes: Inhalation
Health Effect: Acute - systemic effects
Value: 25 mg/m3

: Type of Application (Use): Consumers
Exposure routes: Ingestion
Health Effect: Acute - systemic effects
Value: 10 mg/kg body weight (bw) /day

: Type of Application (Use): Consumers
Exposure routes: Skin contact
Health Effect: Acute - local effects
Value: 0.224 mg/cm2

: Type of Application (Use): Consumers
Exposure routes: Inhalation
Health Effect: Acute - local effects
Value: 25 mg/m3

: Type of Application (Use): Consumers
Exposure routes: Skin contact
Health Effect: Long-term - systemic effects
Value: 10 mg/kg body weight (bw) /day

: Type of Application (Use): Consumers
Exposure routes: Inhalation
Health Effect: Long-term - systemic effects
Value: 0.14 mg/m3

: Type of Application (Use): Consumers
Exposure routes: Ingestion
Health Effect: Long-term - systemic effects
Value: 10 mg/kg body weight (bw) /day

: Type of Application (Use): Consumers
Exposure routes: Inhalation
Health Effect: Long-term - local effects
Value: 0.14 mg/m3

Predicted No Effect Concentration (PNEC)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)

: Value: 0.022 mg/l
Compartment: Fresh water

: Value: 0.002 mg/l
Compartment: Marine water

: Value: 0.0109 mg/l
Compartment: Intermittent use/release

: Value: 0.017 mg/l
Compartment: Fresh water sediment

: Value: 0.017 mg/kg
Compartment: Fresh water sediment

: Value: 0.00174 mg/kg

Compartment: Marine sediment

: Value: 0.885 mg/kg
Compartment: Soil

: Value: 108 mg/l
Compartment: Sewage treatment plants

8.2. Exposure controls

Engineering measures : Provide local exhaust ventilation when handling material in bulk.

Eye protection : Tightly fitting safety goggles Eye protection complying with EN 166.

Hand protection : Material: butyl-rubber
Break through time: > 8 h
Glove thickness: 0.5 mm
Protective gloves complying with EN 374.

:
The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Skin and body protection : Wear as appropriate: Apron Boots Remove and wash contaminated clothing before re-use.

Hygiene measures : Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Half mask with combination filter A2/P2 (EN 141) Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form : powder

Colour : pink

Odour	: pleasant, sweet
pH	: 2.35 - 2.65
Flash point	: does not flash
Thermal decomposition	: > 50 °C
Relative density	: 1.07
Water solubility	: 65 g/l at 20 °C

9.2. Other information

no data available

SECTION 10: Stability and reactivity

10.1. Reactivity : No dangerous reaction known under conditions of normal use.

10.2. Chemical stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid : Exposure to moisture

10.5. Incompatible materials : Strong bases
Combustible material
Halogenated compounds
Heavy metal salts

10.6. Hazardous decomposition products : Oxygen
Chlorine
Sulphur oxides
Sulphur dioxide
Hypochlorite

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

LD50 / Rat : 4,123 mg/kg
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  LD50 / Rat : 500 mg/kg
  Method: OECD Test Guideline 423

- Sodium C10-13-alkylbenzenesulfonate
  LD50 / Rat : 1,080 mg/kg
  Method: OECD Test Guideline 401

- Malic acid
  LD50 / Mouse : 1,600 mg/kg

- Sulphamidic acid
  LD50 / Rat : > 2,000 mg/kg
  Method: OECD Test Guideline 401

- Sodium toluenesulphonate
  LD50 / Rat : 6,500 mg/kg

- Dipotassium peroxodisulphate
  LD50 / Rat : 1,130 mg/kg
  Method: OECD Test Guideline 401

- Dipentene
  LD50 / Rat : 5,300 mg/kg

Acute inhalation toxicity

LC50 / 4 h Rat : 3.7 mg/l
Method: aerosol
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  LC50 / 4 h Rat : > 5 mg/l
  Method: OECD Test Guideline 403

- Malic acid
  LC50 / 4 h Rat : 11.4 mg/l
  The toxicological data has been taken from products of similar composition.

- Dipotassium peroxodisulphate
  LC50 / 4 h Rat : > 10.7 mg/l
  Respiratory tract irritation Dust

Acute dermal toxicity

LD50 / Rat : 2,200 mg/kg
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  LD50 / Rat : > 2,000 mg/kg
  Method: Directive 67/548/EEC, Annex V, B.3.

- Sodium C10-13-alkylbenzenesulfonate
  LD50 / Rat : > 2,000 mg/kg
  Method: OECD Test Guideline 402

- Malic acid
  LD50 / Rabbit : 20,000 mg/kg
  The toxicological data has been taken from products of similar composition.

- Sulphamidic acid
  LD50 / Rat : > 2,000 mg/kg
  Method: OECD Test Guideline 402

- Sodium toluenesulphonate
  LD50 / Rabbit : > 2,000 mg/kg

- Dipotassium peroxodisulphate
  LD50 / Rabbit : > 10,000 mg/kg

- Dipentene
  LD50 / Rat : > 5,000 mg/kg

Skin irritation

Result: Irritating to skin.
Method: OECD Test Guideline 404
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Rabbit
  Classification: Corrosive
  Result: Causes burns.
  Method: OECD Test Guideline 404

- Sodium C10-13-alkylbenzenesulfonate
  Rabbit
  Classification: Irritating to skin.
  Result: Severe skin irritation
  Method: OECD Test Guideline 404

- Malic acid
  Rabbit
  Classification: Irritating to skin.
  Result: Skin irritation

- Sulphamidic acid
  Rabbit
  Classification: Irritating to skin.
  Result: Severe skin irritation

- Sodium toluenesulphonate
  Rabbit
  Classification: Irritating to skin.
  Result: Severe skin irritation

- Dipotassium peroxodisulphate
  Rabbit
  Classification: Irritating to skin.

Result: Skin irritation
Method: OECD Test Guideline 404

- Dipentene
  animals (unspecified species)
  Result: Skin irritation
  Information given is based on data obtained from similar substances.

Eye irritation

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Rabbit
  Classification: Causes severe burns.
  Result: Corrosive

- Sodium C10-13-alkylbenzenesulfonate
  Rabbit
  Classification: Risk of serious damage to eyes.
  Result: Irreversible effects on the eye
  Method: OECD Test Guideline 405

- Malic acid
  Rabbit
  Classification: Irritating to eyes.
  Result: Severe eye irritation

- Sulphamidic acid
  Rabbit
  Classification: Irritating to eyes.
  Result: Eye irritation
  Method: US EPA Test Guideline OPPTS 870.2400

- Sodium toluenesulphonate
  Rabbit
  Classification: Irritating to eyes.
  Result: Mild eye irritation

- Dipentene
  Rabbit
  Result: Eye irritation

Sensitisation

Guinea pig Buehler Test
Result: Does not cause skin sensitisation.
(Data on the product itself)

Guinea pig Maximisation Test (GPMT)
Result: Does not cause skin sensitisation.
(Data on the product itself)

Result: Does not cause respiratory sensitisation.

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Guinea pig
  Classification: Does not cause skin sensitisation.
  Result: Does not cause skin sensitisation.

  human
  Classification: Does not cause respiratory sensitisation.
  Result: Does not cause respiratory sensitisation.

- Sodium C10-13-alkylbenzenesulfonate
  Guinea pig
  Classification: Does not cause skin sensitisation.
  Result: Does not cause skin sensitisation.
  Method: OECD Test Guideline 406

- Sodium toluenesulphonate
  Guinea pig
  Classification: Does not cause skin sensitisation.
  Result: Does not cause skin sensitisation.
  Method: OECD Test Guideline 406

- Dipotassium peroxodisulphate
  human
  Classification: May cause sensitisation by inhalation.
  Result: May cause sensitisation by inhalation.

  Mouse Local lymph node test
  Classification: May cause sensitisation by skin contact.
  Result: May cause sensitisation by skin contact.
  Method: OECD Test Guideline 429

- Dipentene
  Guinea pig
  Result: Causes sensitisation.
  There are reports of human skin sensitization.

Repeated dose toxicity

- Sodium C10-13-alkylbenzenesulfonate
  Ingestion Rat
  Exposure time: 28 d
  NOAEL: 125 mg/kg
  LOAEL: 250 mg/kg
  No toxicologically significant effects were found.

- Malic acid
  Oral - feed Rat
  No toxicologically significant effects were found.

- Sulphamidic acid
  Oral Rat
  Method: OECD Test Guideline 408
  No toxicologically significant effects were found.

- Sodium toluenesulphonate
  Oral Rat
  Exposure time: 91 d
  NOAEL: 114 mg/kg
  Method: OECD Test Guideline 408
  No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

  Dermal Mouse
  Exposure time: 91 d
  NOAEL: 440 mg/kg
  Method: OECD Test Guideline 411
  No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  Oral Rat
  NOAEL: 131.5 mg/kg
  Method: OECD Test Guideline 407
  No toxicologically significant effects were found.

- Dipentene
  multiple species
  Organ weight changes, altered blood chemistry

Mutagenicity assessment

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Tests on mammalian cell cultures showed mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.

- Sodium C10-13-alkylbenzenesulfonate
  Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.

- Malic acid
  Animal testing did not show any mutagenic effects. Evidence suggests this substance does not cause genetic damage in animals.

- Sulphamidic acid
  Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

- Sodium toluenesulphonate
  Animal testing did not show any mutagenic effects.

- Dipotassium peroxodisulphate
  Animal testing did not show any mutagenic effects. Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Information given is based on data obtained from similar substances.

- Dipentene

Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.

Carcinogenicity assessment

- Malic acid
  Not classifiable as a human carcinogen. Due to its physical properties, there is no potential for adverse effects.

- Sodium toluenesulphonate
  Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  Not classifiable as a human carcinogen. Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar substances.

- Dipentene
  Not classifiable as a human carcinogen.

Toxicity to reproduction assessment

No toxicity to reproduction

- Sodium C10-13-alkylbenzenesulfonate
  No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.

- Malic acid
  No toxicity to reproduction Due to its physical properties, there is no potential for adverse effects.

- Sodium toluenesulphonate
  no data available

- Dipotassium peroxodisulphate
  No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.

- Dipentene
  No toxicity to reproduction Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.

Assessment teratogenicity

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Animal testing showed no developmental toxicity.

- Sodium C10-13-alkylbenzenesulfonate
  Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

- Malic acid
  Animal testing showed no developmental toxicity.

- Sodium toluenesulphonate
  Animal testing showed no developmental toxicity. Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  Animal testing showed no developmental toxicity. Information given is based on data obtained from similar substances.

- Dipentene
  Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish

LC50 / 96 h / Salmo salar (Atlantic salmon): 24.6 mg/l
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  LC50 / 96 h / Cyprinodon variegatus (sheepshead minnow): 1.09 mg/l
  Method: Directive 67/548/EEC, Annex V, C.1.

- Sodium C10-13-alkylbenzenesulfonate
  LC50 / 96 h / Lepomis macrochirus (Bluegill sunfish): 1.67 mg/l
  Method: see user defined free text

- Sulphamidic acid
  LC50 / 96 h / Pimephales promelas (fathead minnow): 70.3 mg/l
  Method: OECD Test Guideline 203
  Information given is based on data obtained from similar substances.

- Sodium toluenesulphonate
  LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): > 490 mg/l
  Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  LC50 / 96 h / Oncorhynchus mykiss (rainbow trout): 76.3 mg/l
  Method: US EPA Test Guideline OPP 72-1
  Information given is based on data obtained from similar substances.

- Dipentene
  LC50 / 96 h / Pimephales promelas (fathead minnow): 0.702 mg/l
  Information given is based on data obtained from similar substances.

Toxicity to aquatic plants

EC50 / 72 h / Algae: 20 mg/l
(Data on the product itself)

NOEC / Algae: 6.25 mg/l
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  ErC50 / 96 h / Selenastrum capricornutum (green algae): > 1 mg/l
  Method: OECD Test Guideline 201

  NOEC / 72 h / Selenastrum capricornutum (green algae): 0.5 mg/l

- Sodium C10-13-alkylbenzenesulfonate
  ErC50 / 72 h / Desmodesmus subspicatus (green algae): 127.9 mg/l

  NOEC / 15 d / Algae: 3.1 mg/l

- Sulphamidic acid
  ErC50 / 72 h / Desmodesmus subspicatus (green algae): 48 mg/l
  Method: OECD Test Guideline 201

  NOEC / 72 h / Desmodesmus subspicatus (green algae): 18 mg/l
  Method: OECD Test Guideline 201

- Sodium toluenesulphonate
  EC50 / 96 h / Desmodesmus subspicatus (green algae): 236 mg/l
  Information given is based on data obtained from similar substances.

  NOEC / 96 h / Desmodesmus subspicatus (green algae): 75 mg/l
  Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  NOEC / 72 h / Pseudokirchneriella subcapitata (green algae): 39.2 mg/l
  Method: OECD Test Guideline 201
  Information given is based on data obtained from similar substances.

Toxicity to aquatic invertebrates

EC50 / 48 h / Daphnia magna (Water flea): 6.5 mg/l
(Data on the product itself)

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  EC50 / 48 h / Daphnia magna (Water flea): 3.5 mg/l
  Method: OECD Test Guideline 202

- Sodium C10-13-alkylbenzenesulfonate
  EC50 / 48 h / Daphnia magna (Water flea): 2.9 mg/l
  Method: OECD Test Guideline 202

- Malic acid
  EC50 / 48 h / Daphnia magna (Water flea): 240 mg/l

- Sulphamidic acid
  EC50 / 48 h / Daphnia magna (Water flea): 71.6 mg/l
  Method: OECD Test Guideline 202

- Sodium toluenesulphonate
  EC50 / 48 h / Daphnia magna (Water flea): > 318 mg/l
  Information given is based on data obtained from similar substances.

- Dipotassium peroxodisulphate
  EC50 / 48 h / Daphnia magna (Water flea): 120 mg/l
  Method: US EPA Test Guideline OPP 72-2
  Information given is based on data obtained from similar substances.

- Dipentene
  EC50 / 48 h / Daphnia magna (Water flea): 0.421 mg/l
  Information given is based on data obtained from similar substances.

Toxicity to other organisms

LD50 / Rat: 4,123 mg/kg

Chronic toxicity to fish

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  NOEC / 37 d / Cyprinodon variegatus (sheepshead minnow): 0.222 mg/l

- Sodium C10-13-alkylbenzenesulfonate
  NOEC / 28 d / Lepomis macrochirus (Bluegill sunfish): 1 mg/l
  Method: OECD Test Guideline 204

Chronic toxicity to aquatic Invertebrates

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  NOEC / 28 d / Americamysis bahia (mysid shrimp): 0.267 mg/l

- Sodium C10-13-alkylbenzenesulfonate
  NOEC / 21 d / Daphnia magna (Water flea): 1.18 mg/l
  Method: OECD Test Guideline 211

12.2. Persistence and degradability

Biodegradability

Expected to be biodegradable

- Pentapotassium bis(peroxymonosulphate) bis(sulphate)
  Biodegradable

- Sodium C10-13-alkylbenzenesulfonate
  Method: OECD Test Guideline 301
  rapidly biodegradable

- Malic acid
  Readily biodegradable

- Sulphamidic acid
  Biodegradable

Not applicable

- Sodium toluenesulphonate
  / 28 d
  Biodegradation: 0 - 2 %
  Method: OECD Test Guideline 301C
  Not readily biodegradable.

- Dipotassium peroxodisulphate
  Readily biodegradable

- Dipentene
  Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation

- Malic acid
  Accumulation in aquatic organisms is unlikely.

- Sodium toluenesulphonate
  Bioconcentration factor (BCF): < 2.3
  Method: OECD Test Guideline 305

- Dipentene
  Can accumulate in aquatic organisms.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Dispose of as special waste in compliance with local and national regulations. The product should not be allowed to enter drains, water courses or the soil.
Contaminated packaging	:	If recycling is not practicable, dispose of in compliance with local regulations.

SECTION 14: Transport information

ADR

14.1.	UN number:	Not applicable
14.2.	UN proper shipping name:	Not applicable

14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IATA_C
14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

IMDG
14.1. UN number: Not applicable
14.2. UN proper shipping name: Not applicable
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: none
14.6. Special precautions for user:
Not classified as dangerous in the meaning of transport regulations.

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

SECTION 15: Regulatory information

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

Water contaminating class (Germany) : WGK 2 water endangering
Self assessment

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)

Listed Substance : Sulphamidic acid (CAS-No.5329-14-6) (EC-No.226-218-8)
List number: : 3

For information on uses please refer to Section 1.
For further information please refer to the list number in the regulation and relevant amendments.

15.2. Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: Other information

Full text of H-Statements referred to under section 3.

H226 Flammable liquid and vapour.
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.

H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Other information	professional use

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-No.	Chemical Abstracts Service number
CLP	Classification, Labelling and Packaging
EbC50	Concentration at which 50% reduction of biomass is observed
EC50	Median effective concentration
EN	European Norm
EPA	Environmental Protection Agency
ErC50	Concentration at which a 50% inhibition of growth rate is observed
EyC50	Concentration at which 50 % inhibition of yield is observed
IATA_C	International Air Transport Association (Cargo)
IBC	International Bulk Chemical Code
ICAO	International Civil Aviation Organization
ISO	International Standard Organization
IMDG	International Maritime Dangerous Goods
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
n.o.s.	Not Otherwise Specified
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No observed adverse effect level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
OPPTS	Office of Prevention, Pesticides and Toxic Substances
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short term exposure limit
TWA	Time Weighted Average (TWA):
vPvB	very Persistent and very Bioaccumulative

Further information

No ES Annex has been created as to the best of our knowledge and information available at the date of its publication no Exposure Scenario information is currently available for the substances within the mixture. Please see Sections 1 to 16 of the Safety Data Sheet.

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