

HiTEC® 350G Performance Additive

SDS no. H350G

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

1.1 Product identifier

Product name : HiTEC® 350G Performance Additive
Product description : Petrochemical industry: Gear Additive Package
Product type : Liquid.

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

Identified uses
Formulation of additive packages, lubricants and greases - Industrial
General use of lubricants and greases in vehicles or machinery - Industrial
General use of lubricants and greases in vehicles or machinery - Professional

See section 7.3 and where applicable the annex to this Safety Data Sheet for further information on the relevant uses.

1.3 Details of the supplier of the safety data sheet

Afton Chemical Limited	Afton Chemical S.P.R.L. (Woluwe)	Afton Chemical SPRL (Feluy Plant)
Euro-Tech Centre	Alma Court, Lenneke Marelaan, 8	Rue de Scoufflény, 50
London Road, Bracknell,	B-1932	B-7191 Ecaussinnes Lalaing,
RG12 2UW, England	St-Stevens-Woluwe	Belgium
Tel: +44 1344 304141	Belgium	Tel: +32 67 286211
	Tel: +32 2 715 2211	

e-mail address of person responsible for this SDS : Lubricant and Fuel additives: msds@aftonchemical.com

1.4 Emergency telephone number

Hours of operation : 24 hours a day, 7 days a week
Telephone number :

+43-13649237 (Austria)	+421-233057972 (Slovakia)
+32-28083237 (Belgium)	+38-618888016 (Slovenia)
+359-32570104 (Bulgaria)	+46-852503403 (Swedish)
+385-17776920 (Croatia)	+41-435082011 (Switzerland)
+420-228880039 (Czech Republic)	+380-947101374 (Ukraine)
+45-69918573 (Denmark)	+44-8708200418 (UK)
+358-942419014 (Finland)	+1-703-527-3887 (International)
+33-975181407 (France)	+65-3158-1349 (Asia Pacific)
+36-18088425 (Hungary)	+61-290372994 (Australia)
+353-19014670 (Ireland)	4001-204937 (China)
+39-0245557031 (Italy)	+(91)-22-3354 3594 (India)
+352-20202416 (Luxembourg)	+81-345209637 (Japan)
+31-858880596 (The Netherlands)	00-308-13-2549 (South Korea)
+47-21930678 (Norway)	+1-703-741-5979 (Spanish language)
+48-223988029 (Poland)	1-800-424-9300 (US & Canada)
+351-308801773 (Portugal)	

Limited Availability - EU Poison Centre Contact Numbers:

Pursuant to EU guidance and legislative text, Afton Chemical Ltd. are providing the appropriate EU In-Country Poison Centre numbers and the specified limitations on their hours of service. Afton Chemical Ltd. make no representations as to the accuracy of the availability, support, information and/or guidance provided by any the following state sponsored Centres.

Belgium: +32 (0)70 245 245	Netherlands: +31 (0)30 2748888
Denmark: +45 8212 1212	Norway: +47 22 59 13 00
France: +33 (0)1 45 42 59 59	Poland: Not available for SDS use
Germany: To be specified soon	Portugal: +351 808 250 143
Greece: +30 210 779 3777	Romania: +40 (0)21 318 36 06 (8am – 3pm)
Italy: Not available for SDS use	Spain: +34 91 562 04 20
Latvia: +371 67042473 (Fire & Rescue: 112)	UK: Not available for SDS use
Austria: +43-13649237	

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Skin Irrit. 2, H315

Eye Irrit. 2, H319

Skin Sens. 1, H317

Aquatic Chronic 2, H411

See Section 11 for more detailed information on health effects and symptoms.

See Section 12 for environmental precautions.

See Section 16 for the full text of the H statements declared above.

2.2 Label elements

Hazard pictograms :



Signal word : No signal word.

Hazard statements : Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Avoid release to the environment.

Response : Collect spillage.

Storage : Store in a well-ventilated place.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : Amines, C10-14-tert-alkyl

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
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SECTION 3: Composition/information on ingredients

Distillates (petroleum), hydrotreated heavy paraffinic	REACH #: 01-2119484627-25 EC: 265-157-1 CAS: 64742-54-7	≥10 - ≤15	Not classified.	[2]
Amines, C10-14-tert-alkyl	REACH #: 01-2119456798-18 EC: 701-175-2 CAS: -	≥5 - ≤10	Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
Phosphoric acid, 2-ethylhexyl ester	REACH #: 01-2119896587-13 EC: 235-741-0 CAS: -	≥5 - ≤10	Skin Corr. 1B, H314 Eye Dam. 1, H318	[1]
Alkyl phosphonate	Confidentiality: Conf0590	≥3 - ≤5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	[1]
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	REACH #: 01-2119976351-35 EC: 293-927-7 CAS: -	≥1 - ≤3	Aquatic Chronic 3, H412	[1]
C16-18-(even numbered, saturated and unsaturated)-alkylamines	REACH #: 01-2119473797-19 EC: 627-034-4 CAS: -	≥1 - ≤3	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 STOT RE 2, H373 (gastrointestinal tract, immune system, liver) Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
octylamine	REACH #: 01-2119474880-31 EC: 203-916-0 CAS: 111-86-4	≥0.5 - ≤1	Flam. Liq. 3, H226 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 4, H332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

The mineral oils in the product contain < 3% DMSO extract (IP 346).

If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration, the registration date has not yet come due or this information is proprietary.

If a dash (-) is shown in the CAS number field, please contact an Afton representative for information about the CAS and other chemical identity numbers used for global regulatory compliance.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : In case of fire, use water spray (fog), foam, dry chemical or CO₂.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
phosphorus oxides

5.3 Advice for firefighters

SECTION 5: Firefighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

SECTION 7: Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Europe Distillates (petroleum), hydrotreated heavy paraffinic	EU OEL (Europe). TWA: 5 mg/m ³ 8 hours.
Austria Distillates (petroleum), hydrotreated heavy paraffinic	EU OEL (Europe). TWA: 5 mg/m ³ 8 hours.
Belgium Distillates (petroleum), hydrotreated heavy paraffinic	Limit values (Belgium, 9/2017). TWA: 5 mg/m ³ 8 hours. Form: mist STEL: 10 mg/m ³ 15 minutes. Form: mist
Bulgaria Distillates (petroleum), hydrotreated heavy paraffinic	Minister of Labour and Social Affairs and the Minister of Health (Bulgaria, 1/2012). Limit value 8 hours: 5 mg/m ³ 8 hours.
Croatia Distillates (petroleum), hydrotreated heavy paraffinic	EU OEL (Europe). TWA: 5 mg/m ³ 8 hours.
Czech Republic Distillates (petroleum), hydrotreated heavy paraffinic	Ministry of Health, PEL/NPK-P (Czech Republic, 1/2016). TWA: 5 mg/m ³ 8 hours. Form: aerosol STEL: 10 mg/m ³ 15 minutes. Form: aerosol
Denmark Distillates (petroleum), hydrotreated heavy paraffinic	Working Environment Authority (Denmark, 10/2012). TWA: 1 mg/m ³ 8 hours. Form: mist and particles
Estonia Distillates (petroleum), hydrotreated heavy paraffinic	EU OEL (Europe). TWA: 5 mg/m ³ 8 hours.
Finland Distillates (petroleum), hydrotreated heavy paraffinic	Institute of Occupational Health, Ministry of Social Affairs (Finland, 1/2017). TWA: 5 mg/m ³ 8 hours. Form: Mist
France Distillates (petroleum), hydrotreated heavy paraffinic	EU OEL (Europe). TWA: 5 mg/m ³ 8 hours.
Germany Distillates (petroleum), hydrotreated heavy paraffinic	DFG MAC-values list (Germany, 7/2017). PEAK: 20 mg/m ³ , 4 times per shift, 15 minutes. Form: respirable fraction TWA: 5 mg/m ³ 8 hours. Form: respirable fraction
Greece Distillates (petroleum), hydrotreated heavy paraffinic	Ministry of Labour and Social Affairs (Greece, 2/2012). TWA: 5 mg/m ³ 8 hours.
Hungary Distillates (petroleum), hydrotreated heavy paraffinic	25/2000. (IX.30) Ministry of Health and Ministry of Social and Family Affairs Joint Decree (Hungary, 12/2011). CEIL: 5 mg/m ³ Form: mist
Iceland	

SECTION 8: Exposure controls/personal protection

Distillates (petroleum), hydrotreated heavy paraffinic

Minsistry of Welfare, List of Exposure Limits (Iceland, 1/2013).

TWA: 1 mg/m³ 8 hours. Form: particulates

Ireland

Distillates (petroleum), hydrotreated heavy paraffinic

NAOSH (Ireland, 3/2016).

OELV-8hr: 5 ppm 8 hours. Form: Inhalable fraction

Italy

Distillates (petroleum), hydrotreated heavy paraffinic

EU OEL (Europe).

TWA: 5 mg/m³ 8 hours.

Latvia

Distillates (petroleum), hydrotreated heavy paraffinic

Ministers Cabinet Regulations Nr.325 - AER (Latvia, 6/2015).

TWA: 5 mg/m³ 8 hours.

octylamine

Ministers Cabinet Regulations Nr.325 - AER (Latvia, 6/2015).

TWA: 1 mg/m³ 8 hours.

Lithuania

Distillates (petroleum), hydrotreated heavy paraffinic

Lithuanian Hygiene Standard HN 23 (Lithuania, 10/2007).

TWA: 1 mg/m³ 8 hours. Form: mist

STEL: 3 mg/m³ 15 minutes. Form: mist

Netherlands

Distillates (petroleum), hydrotreated heavy paraffinic

Ministry of Social Affairs and Employment, Legal limit values (Netherlands, 2/2017).

OEL, 8-h TWA: 5 mg/m³ 8 hours. Form: mist

Norway

Distillates (petroleum), hydrotreated heavy paraffinic

FOR-2011-12-06-1358 (Norway, 7/2016).

TWA: 1 mg/m³ 8 hours. Form: mist and particles

TWA: 50 mg/m³ 8 hours. Form: vapor

Poland

Distillates (petroleum), hydrotreated heavy paraffinic

Regulation of the Minister of Family, Labor and Social Policy (J of Laws 2017, item 1348) (Poland, 11/2017).

TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction

Portugal

Distillates (petroleum), hydrotreated heavy paraffinic

Portuguese Institute of Quality (Portugal, 11/2014).

TWA: 5 mg/m³ 8 hours. Form: Only aerosol

STEL: 10 mg/m³ 15 minutes. Form: Only aerosol

Romania

Distillates (petroleum), hydrotreated heavy paraffinic

HG 1218/2006 with subsequent modifications and additions (Romania, 1/2012).

VLA: 5 mg/m³ 8 hours.

Short term: 10 mg/m³ 15 minutes.

Slovakia

Distillates (petroleum), hydrotreated heavy paraffinic

Government regulation SR c. 355/2006 (Slovakia, 4/2015).

TWA: 1 mg/m³, (Mineral oils) 8 hours. Form: liquid aerosol, fumes

TWA: 5 ppm, (Mineral oils) 8 hours. Form: liquid aerosol, fumes

STEL: 3 mg/m³, (Mineral oils) 15 minutes. Form: liquid aerosol, fumes

STEL: 15 ppm, (Mineral oils) 15 minutes. Form: liquid aerosol, fumes

Slovenia

Distillates (petroleum), hydrotreated heavy paraffinic

EU OEL (Europe).

TWA: 5 mg/m³ 8 hours.

Spain

Distillates (petroleum), hydrotreated heavy paraffinic

National institute of occupational safety and health (Spain, 1/2017).

TWA: 5 mg/m³ 8 hours. Form: mist

STEL: 10 mg/m³ 15 minutes. Form: mist

Sweden

Distillates (petroleum), hydrotreated heavy paraffinic

Work environment authority Regulation 2018:1 (Sweden, 12/2015).

TWA: 1 mg/m³ 8 hours. Form: mist and fume

STEL: 3 mg/m³ 15 minutes. Form: mist and fume

Switzerland

Distillates (petroleum), hydrotreated heavy paraffinic

SUVA (Switzerland, 1/2017).

TWA: 5 mg/m³ 8 hours. Form: Inhalable dust (total dust)

Turkey

Distillates (petroleum), hydrotreated heavy paraffinic

EU OEL (Europe).

TWA: 5 mg/m³ 8 hours.

United Kingdom (UK)

Distillates (petroleum), hydrotreated heavy paraffinic

EU OEL (Europe).

TWA: 5 mg/m³ 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level / Predicted No Effect Concentration

SECTION 8: Exposure controls/personal protection

If DNEL's or PNEC's are shown, these are for the potential Risk Determining Substances for the product. The specific Risk Determining Substances for the product are listed in the exposure scenarios found in the annex to this Safety Data Sheet.

Derived No Effect Level

Product/ingredient name	Type	Exposure	Value	Population	Effects
Amines, C10-14-tert-alkyl Alkyl phosphonate	DNEL	Oral	0.35 mg/kg	Consumers	-
	DNEL	Dermal	1 mg/kg	Workers	-
	DNEL	Dermal	0.5 mg/kg	Consumers	-
	DNEL	Oral	0.5 mg/kg	Consumers	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines	DNEL	Dermal	0.09 mg/kg	Workers	-
	DNEL	Oral	0.04 mg/kg	Consumers	-

Predicted No Effect Concentration

Product/ingredient name	Compartment Detail	Value	Method Detail
Amines, C10-14-tert-alkyl 1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	Fresh water	0.001 mg/l	-
	Fresh water	0.041 mg/l	-
C16-18-(even numbered, saturated and unsaturated)- alkylamines octylamine	Fresh water	0.26 µg/l	-
	Fresh water	0.0002 mg/l	-

8.2 Exposure controls

Appropriate engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Hand Protection: Wear chemical resistant gloves. Nitrile gloves of minimum thickness 0.4 mm have an expected breakthrough time of 480 minutes or less when in frequent contact with the product. Due to variable exposure conditions the user must consider that the practical use of a chemical-protective glove in practice may be much shorter than the permeation time above. Manufacturer's directions for use, especially about the minimum thickness and the minimum breakthrough time, must be observed. This information does not replace suitability tests by the end user since glove protection varies depending on the conditions under which the product is used.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use appropriate respiratory protection if there is the potential to exceed the exposure limit(s). Seek professional advice prior to respirator selection and use. Select respirator based on suitability to provide adequate worker protection for given working conditions and level of airborne contaminant.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Clear.]

Color : Amber.

Odor : Pungent. [Slight]

Odor threshold : Not available.

pH : Not available.

SECTION 9: Physical and chemical properties

Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: Not available.
Flash point	: Closed cup: 83°C [Pensky-Martens. Minimum]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not applicable (liquid).
Upper/lower flammability or explosive limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.044
Density	: 1.042 g/cm ³ [15.6°C]
Solubility(ies)	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C): 0.8 cm ² /s 9 cSt at 100°C
Explosive properties	: Not available.
Oxidizing properties	: Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Under recommended handling and storage conditions the product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: High temperatures, sparks and open flames.
10.5 Incompatible materials	: Strong oxidizing and reducing agents.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Test	Result	Species	Dose	Exposure	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	Based on data for a similar substance. Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	
Amines, C10-14-tert-alkyl	403 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat	1.19 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rat	251 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	612 mg/kg	-	-
Phosphoric acid, 2-ethylhexyl ester Alkyl phosphonate	-	LD50 Oral	Rat	>5000 mg/kg	-	-
	433 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat	>22 mg/l	1 hours	-
-	-	LD50 Dermal	Rabbit	5000 mg/kg	-	-

SECTION 11: Toxicological information

1,3,4–Thiadiazolidine-2, 5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	420 Acute Oral Toxicity - Fixed Dose Method	LD50 Oral	Rat	3040 mg/kg	-	Based on data for a similar substance.	
	403 Acute Inhalation Toxicity	LC50 Inhalation Vapor	Rat	>2.75 mg/l	4 hours		-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>2000 mg/kg	-	-	
	401 Acute Oral Toxicity	LD50 Oral	Rat	>10000 mg/kg	-	-	
	C16-18-(even numbered, saturated and unsaturated)-alkylamines octylamine	401 Acute Oral Toxicity	LD50 Oral	Rat	1689 mg/kg	-	-
		403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat	1.6 mg/l	4 hours	-
		402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	200 to 2000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	200 to 500 mg/kg	-	-	

Conclusion/Summary : Based on available data, the classification criteria are not met.

Irritation/Corrosion

Product/ingredient name	Test	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant	Based on data for a similar substance.
	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Mild irritant	Based on data for a similar substance.
Amines, C10-14-tert-alkyl	None available.	Rabbit	Skin - Visible necrosis	-
	None available.	Rabbit	Eyes - Visible necrosis	-
Phosphoric acid, 2-ethylhexyl ester	404 Acute Dermal Irritation/Corrosion	Rat	Skin - Visible necrosis	-
	None available.	Rabbit	Skin - Irritant	-
Alkyl phosphonate	None available.	Rabbit	Eyes - Irritant	-
	None available.	Rabbit	Skin - Mild irritant	-
1,3,4–Thiadiazolidine-2, 5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Visible necrosis	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Visible necrosis	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines octylamine	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Visible necrosis	-
	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Visible necrosis	-

Skin : Non-irritating to the skin. Based on test data for this or similar products.

Eyes : Non-irritating to the eyes. Based on test data for this or similar products.

Respiratory : Based on available data, the classification criteria are not met.

Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic Amines, C10-14-tert-alkyl 1,3,4–Thiadiazolidine-2, 5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol octylamine	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
	406 Skin Sensitization	skin	Guinea pig	Sensitizing	-
	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
	None available.	skin	Mouse	Not sensitizing	-

Conclusion/Summary

Skin : Not classified as a skin sensitizer. Based on test data for this or similar products.

Respiratory : Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Based on data for a similar substance.
	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
Amines, C10-14-tert-alkyl	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
Phosphoric acid, 2-ethylhexyl ester	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Human	Negative	-
Alkyl phosphonate	476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vivo Subject: Mammalian-Animal	Negative	-
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines octylamine	None available.	Experiment: In vitro Subject: Bacteria	Negative	-
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Remarks
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics	451 Carcinogenicity Studies	Mouse	2 years; 3 days per week	Negative - Dermal	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Product/ingredient name	Test	Route of exposure	Species	Maternal toxicity	Fertility	Development toxin	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Amines, C10-14-tert-alkyl	415 One-Generation Reproduction Toxicity Study	Oral	Rat	Positive	Negative	Negative	-
Phosphoric acid, 2-ethylhexyl ester	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	-
Alkyl phosphonate	416 Two-Generation Reproduction Toxicity Study	Oral	Rat	Positive	Negative	Equivocal	Based on data for a similar

SECTION 11: Toxicological information

C16-18-(even numbered, saturated and unsaturated)-alkylamines	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat - Male	Positive	Negative	Negative	substance. WOE does not support classification Based on data for a similar substance. -
octylamine	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Product/ingredient name	Test	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic Amines, C10-14-tert-alkyl	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.
	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	-
Alkyl phosphonate	None available.	Rat	Negative - Oral	Based on data for a similar substance.
C16-18-(even numbered, saturated and unsaturated)-alkylamines	None available.	Rat	Negative - Oral	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Amines, C10-14-tert-alkyl	Category 3	Not applicable.	Respiratory tract irritation
2-ethylhexyl dihydrogen phosphate	Category 3	Not applicable.	Respiratory tract irritation
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Category 3	Not applicable.	Respiratory tract irritation
octylamine	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Category 2	Not determined	gastrointestinal tract, immune system and liver

Aspiration hazard

Product/ingredient name	Result
C16-18-(even numbered, saturated and unsaturated)-alkylamines	ASPIRATION HAZARD - Category 1
Hydrocarbons, C11-C13, isoalkanes, <2% aromatics	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : No specific data.

SECTION 11: Toxicological information

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation. Ingestion may cause gastrointestinal irritation and diarrhea.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Species	Dose	Exposure	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	125 mg/kg	-	Sub-chronic LOAEL Oral	Based on data for a similar substance.
	411 Subchronic Dermal Toxicity: 90-day Study	Rat - Female	30 mg/kg	-	Sub-chronic NOAEL Dermal	Based on data for a similar substance.
	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rabbit	1000 mg/kg	-	Sub-acute NOAEL Dermal	Based on data for a similar substance.
	None available.	Rat	0.22 mg/l	4 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
Amines, C10-14-tert-alkyl	None available.	Rat	0.15 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rat	20 mg/kg	-	Sub-acute NOAEL Dermal	-
Phosphoric acid, 2-ethylhexyl ester	412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study	Rat	19 mg/m ³	4 weeks	Sub-acute NOAEL Inhalation Vapor	-
	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat	250 mg/kg	-	Chronic NOAEL Oral	-
Alkyl phosphonate	None available.	Rat	360 mg/kg	-	Sub-chronic NOAEL Oral	Based on data for a similar substance.
1,3,4-Thiadiazolidine-2, 5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol C16-18-(even numbered, saturated and unsaturated)-alkylamines octylamine	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	50 mg/kg	-	Sub-acute NOEL Oral	-
	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	3.25 mg/kg	-	Sub-acute NOAEL Oral	-
	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat	100 mg/kg	-	Sub-chronic NOAEL Oral	Based on data for a similar substance.

Conclusion/Summary : Based on available data, the classification criteria are not met.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

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Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Other information	: Not available.

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12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance. Based on data for a similar substance. Based on data for a similar substance. Based on data for a similar substance. QSAR result.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	
	Chronic NOEL 1000 mg/l	Fish - Oncorhynchus mykiss	14 days	
Amines, C10-14-tert-alkyl	Acute EL50 0.44 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EL50 2.5 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 63.5 mg/l	Micro-organism	30 minutes	-
	Acute LL50 1.3 mg/l	Fish - Oncorhynchus mykiss	96 hours	-
	Chronic NOEC 0.078 mg/l	Fish - Oncorhynchus mykiss	96 days	-
	Chronic NOEL 0.05 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EL50 49 mg/l	Algae	72 hours	-
Phosphoric acid, 2-ethylhexyl ester	Acute EL50 >100 mg/l	Daphnia	48 hours	-
	Acute EL50 420 mg/l	Micro-organism	3 hours	-
	Acute LL50 >100 mg/l	Fish	96 hours	-
	Fresh water			
Alkyl phosphonate	Chronic NOEL 25 mg/l	Algae	72 hours	-
	Acute EC50 14.4 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EL50 >10000 mg/l	Micro-organism	3 hours	Based on data for a similar substance.
	Acute IC50 20.8 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute LC50 63.4 mg/l	Fish - Danio rerio	96 hours	-
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	Chronic EC10 5.1 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Chronic NOEL 4.1 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Acute EC50 41 mg/l	Daphnia	48 hours	-
	Acute LC50 1000 mg/l	Fish	96 hours	-
C16-18-(even numbered, saturated and unsaturated)-alkylamines	Acute EL50 0.04 mg/l	Algae - Selenastrum capricornutum	96 hours	-
	Acute EL50 0.011 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 222.5 mg/l	Micro-organism	3 hours	Based on data for a similar substance.
	Acute LL50 0.06 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic NOEL 0.01 mg/l	Algae - Selenastrum capricornutum	96 hours	-
	Chronic NOEL 0.013	Daphnia - Daphnia magna	21 days	-

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octylamine	mg/l Acute EC50 1.9 mg/l Acute EL50 0.23 mg/l Acute LC50 5.19 mg/l Chronic EL10 0.07 mg/l	Daphnia - Daphnia magna Algae - Desmodesmus subspicatus Fish - Pimephales promelas Algae - Desmodesmus subspicatus	48 hours 72 hours 96 hours 72 hours	- - - -
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Conclusion/Summary : Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
Amines, C10-14-tert-alkyl	OECD 301D Ready Biodegradability - Closed Bottle Test	21.8 % - Not readily - 28 days	-
Phosphoric acid, 2-ethylhexyl ester	301B Ready Biodegradability - CO ₂ Evolution Test	98 % - Readily - 28 days	-
Alkyl phosphonate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	89.8 % - Readily - 28 days	Readily biodegradable but failing the 10-day window
C16-18-(even numbered, saturated and unsaturated)-alkylamines	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	66 % - Readily - 28 days	-
octylamine	OECD 301A Ready Biodegradability - DOC Die-Away Test	99 % - Readily - 11 days	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy paraffinic	-	-	Not readily
Amines, C10-14-tert-alkyl	-	-	Not readily
Phosphoric acid, 2-ethylhexyl ester	-	-	Readily
Alkyl phosphonate	-	-	Readily
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-nonanethiol	-	-	Not readily
C16-18-(even numbered, saturated and unsaturated)-alkylamines	-	-	Readily
octylamine	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Amines, C10-14-tert-alkyl	2.9	-	low
octylamine	2.9	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

SECTION 12: Ecological information

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**







Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

European waste catalogue (EWC)

Waste code	Waste designation
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine)	Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine) Marine pollutant	Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine)
14.3 Transport hazard class(es)	9  	9  	9  
14.4 Packing group	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.
Additional information	Hazard identification number 90	Remarks Marine pollutant	-

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulation (EC) No. 1907/2006 (REACH)****Annex XIV - List of substances subject to authorization****Annex XIV**

None of the components are listed.

Substances of very high concern

None of the components are listed.

SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

International Inventory Status

Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Japan : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Taiwan : All components are listed or exempted.
United States : All components are listed or exempted.
Europe : This product contains only components that have been either registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No.1907/2006 (REACH) and amendments. A declaration of REACH compliance is available on request. If this product is imported to the EEA as an additive package or component within a finished fluid or fuel, contact Afton to discuss the possibility of setting up an Only Representative agreement (REACH@aftonreach.com).

Other EU regulations

Germany

Storage class (TRGS 510) : 10

Hazard class for water : 2

WGK Notes:

Mass fraction of WGK 3 carcinogenic substances ($\geq 0.1\%$): 0%

Mass fraction of WGK 2 carcinogenic substances ($\geq 0.1\%$): 0%

Acute toxicity evaluation points based on substance data: Points = 0

Aquatic toxicity evaluation points based on test data for this or similar products: Points = 8

15.2 Chemical Safety Assessment : Complete.

When included, the exposure scenarios were determined based on a review of the risk determining substances and the intended product application. Safe use is demonstrated through using the ATC, ATIEL and Afton systems for Generic Exposure Scenarios for mixtures. Further information on these systems is available by contacting Afton at the email address in section 1.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative
 WOE = Weight of Evidence

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 2, H411	Expert judgment

Europe

SECTION 16: Other information

<p>Full text of abbreviated H statements</p>	<p>H226 H301 H302 H304 H311 H314 H315 H317 H318 H319 H330 H332 H335 H373 H400 H410 H411 H412</p>	<p>Flammable liquid and vapor. Toxic if swallowed. Harmful if swallowed. May be fatal if swallowed and enters airways. Toxic in contact with skin. Causes severe skin burns and eye damage. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Causes serious eye irritation. Fatal if inhaled. Harmful if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.</p>
<p>Full text of classifications [CLP/GHS]</p>	<p>Acute Tox. 2, H330 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 2, H411 Aquatic Chronic 3, H412 Asp. Tox. 1, H304 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Skin Corr. 1A, H314 Skin Corr. 1B, H314 Skin Irrit. 2, H315 Skin Sens. 1A, H317 STOT RE 2, H373 STOT SE 3, H335</p>	<p>ACUTE TOXICITY (inhalation) - Category 2 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 3 ASPIRATION HAZARD - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 1A SKIN CORROSION/IRRITATION - Category 1B SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITIZATION - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p>
<p>Date of issue/ Date of revision</p>	<p>: 26 March 2019</p>	
<p>Date of previous issue</p>	<p>:</p>	
<p>Notice to reader</p>	<p>This information and these recommendations are offered in good faith and believed to be correct as of the date hereof. Information and recommendations are supplied upon the condition that the recipients will make their own decision as to safety and suitability for their purposes. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature, are made with respect to the product or the information and recommendations. Afton makes no representation as to completeness or accuracy. In no event will Afton be responsible for damages of any nature whatsoever resulting from the use or reliance upon the information and recommendations.</p>	

Identification of the substance or mixture

Product name : HiTEC® 350G Performance Additive
Product definition : Mixture

Section 1 Title

Short title of the exposure scenario : Formulation of additive packages, lubricants and greases - Industrial

List of use descriptors : **Identified use name:** Formulation of additive packages, lubricants and greases - Industrial
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC09, PROC15
Substance supplied to that use in form of: In a mixture
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02
Market sector by type of chemical product: PC24
Article category related to subsequent service life: AC01

Environmental contributing scenarios : **Formulation into mixture - ERC02**

Health Contributing scenarios : **General measures applicable to all activities**
General exposures. Use in contained systems. Elevated temperatures. - PROC02
Mixing operations (closed systems). Batch processes at elevated temperatures. - PROC03
Process sampling - PROC08b
Bulk transfers. Dedicated facility. - PROC08b
Drum/batch transfers. Dedicated facility. - PROC08b
Equipment cleaning and maintenance. - PROC08a, PROC08b
Drum and small package filling - PROC09
Laboratory activities - PROC15
Storage - PROC01, PROC02

Processes and activities covered by the exposure scenario : Industrial formulation of lubricant additives, lubricants and greases. Includes material transfers, mixing, large and small scale packing, sampling, maintenance

Section 2.1 Conditions of use affecting exposure. (Workers - Health)**Contributing scenario controlling worker exposure for 0: General measures applicable to all activities****Operational conditions affecting workers exposure.**

Risk management measures : Consider technical advances and process upgrades (including automation) for the elimination of releases.
Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.
Drain down systems and clear transfer lines prior to breaking containment.
Clean/flush equipment, where possible, prior to maintenance.
Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.
Ensure safe systems of work or equivalent arrangements are in place to manage risks.
Regularly inspect, test and maintain all control measures.
Consider the need for risk-based health surveillance.
Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

Contributing scenario controlling worker exposure for 1: General exposures. Use in contained systems. Elevated temperatures.**Operational conditions affecting workers exposure.**

Risk management measures : Handle substance within a predominantly closed system provided with extract ventilation.

Section 2.1 Conditions of use affecting exposure. (Workers - Health)

Contributing scenario controlling worker exposure for 2: Mixing operations (closed systems). Batch processes at elevated temperatures.

Operational conditions affecting workers exposure.

Risk management measures : Handle substance within a predominantly closed system provided with extract ventilation.

Contributing scenario controlling worker exposure for 3: Process sampling

Operational conditions affecting workers exposure.

Risk management measures : Use a sampling system designed to control exposure.

Contributing scenario controlling worker exposure for 4: Bulk transfers. Dedicated facility.

Operational conditions affecting workers exposure.

Risk management measures : Ensure material transfers are under containment or extract ventilation.

Contributing scenario controlling worker exposure for 5: Drum/batch transfers. Dedicated facility.

Operational conditions affecting workers exposure.

Risk management measures : Provide extract ventilation to points where emissions occur.

Contributing scenario controlling worker exposure for 6: Equipment cleaning and maintenance.

Operational conditions affecting workers exposure.

Risk management measures : Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle. Clear spills immediately.

Contributing scenario controlling worker exposure for 7: Drum and small package filling

Operational conditions affecting workers exposure.

Risk management measures : Ensure material transfers are under containment or extract ventilation.

Contributing scenario controlling worker exposure for 8: Laboratory activities

Operational conditions affecting workers exposure.

Risk management measures : Handle in a fume cupboard or under extract ventilation.

Contributing scenario controlling worker exposure for 9: Storage

Operational conditions affecting workers exposure.

Risk management measures : Store substance within a closed system.

Section 2.2 Conditions of use affecting exposure. (Industrial - Environment)

Contributing scenario controlling environmental exposure for 10: Formulation into mixture

Amounts used : Annual amount used in the EU: 1.00 E+04 Tonnes/year
Fraction of EU tonnage used in region: 1
Fraction of regional tonnage used locally: 1

Frequency and duration of use : Emission days: 300 days per year

Other conditions affecting environmental exposure

Emission factor (Air, Water, Soil) : Negligible wastewater emissions as process operates without water contact.
Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 5.00 E-07
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant): 2.00 E-10
Release fraction to soil from process (after typical onsite RMMs): 0

Environmental factors not influenced by risk management measures.

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

Risk management measures

Technical measures : Treat air emission to provide a typical removal efficiency of 70%
Prevent discharge of undissolved substance to or recover from onsite wastewater.
User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system.

Section 2.2 Conditions of use affecting exposure. (Industrial - Environment)

Waste treatment methods :

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil.

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils.
Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via on-site sewage treatment: 0.1%
Assumed on-site sewage treatment plant flow: 2.00 E+03 m³/d
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 5.22 E+06 kg/day

Disposal Methods : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Section 3 EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Exposure estimation and reference to its source - All Contributing Scenarios

Assessment method : easyTRA or ECOTOC

EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE : The risk management measures/operation conditions that are identified in the exposure scenario are the outcome of a quantitative and qualitative assessment that cover the product.

Environmental hazards are possible in cases of inappropriate handling or disposal. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4 Guidance to check compliance with the exposure scenario

Environment:

Guidance : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Health:

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

Identification of the substance or mixture

Product name : HiTEC® 350G Performance Additive
Product definition : Mixture

Section 1 Title

Short title of the exposure scenario : General use of lubricants and greases in vehicles or machinery - Industrial

List of use descriptors : **Identified use name:** General use of lubricants and greases in vehicles or machinery - Industrial
Process Category: PROC01, PROC02, PROC08b, PROC09
Substance supplied to that use in form of: In a mixture
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC07
Market sector by type of chemical product: PC24
Article category related to subsequent service life: AC01, AC02

Environmental contributing scenarios : **Use of non-reactive processing aid at industrial site (no inclusion into or onto article) - ERC04**
Use of functional fluid industrial site - ERC07

Health Contributing scenarios : **General measures applicable to all activities**
General exposures (closed systems) - PROC01
Initial factory fill of equipment. Use in contained systems. - PROC02, PROC09
Initial factory fill of equipment (open system) - PROC08b
Operation of equipment containing engine oils and similar. Use in contained systems. - PROC01
Equipment cleaning and maintenance. - PROC08b
Equipment cleaning and maintenance. Operation is carried out at elevated temperature (> 20°C above ambient temperature) - PROC08b
Storage - PROC01, PROC02

Processes and activities covered by the exposure scenario : Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2.1 Conditions of use affecting exposure. (Workers - Health)**Contributing scenario controlling worker exposure for 0: General measures applicable to all activities****Operational conditions affecting workers exposure.**

Risk management measures : Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Avoid direct eye contact with product, also via contamination on hands. Use suitable eye protection.

Contributing scenario controlling worker exposure for 1: General exposures (closed systems)**Operational conditions affecting workers exposure.**

Risk management measures : No other specific measures identified.

Contributing scenario controlling worker exposure for 2: Initial factory fill of equipment. Use in contained systems.**Operational conditions affecting workers exposure.**

Risk management measures : No other specific measures identified.

Contributing scenario controlling worker exposure for 3: Initial factory fill of equipment (open system)**Operational conditions affecting workers exposure.**

Risk management measures : Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 4 hours.

Section 2.1 Conditions of use affecting exposure. (Workers - Health)

Contributing scenario controlling worker exposure for 4: Operation of equipment containing engine oils and similar. Use in contained systems.

Operational conditions affecting workers exposure.

Risk management measures : No other specific measures identified.

Contributing scenario controlling worker exposure for 5: Equipment cleaning and maintenance.

Operational conditions affecting workers exposure.

Risk management measures : Drain down and flush system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Contributing scenario controlling worker exposure for 6: Equipment cleaning and maintenance. Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Operational conditions affecting workers exposure.

Risk management measures : Drain down and flush system prior to equipment break-in or maintenance. Provide extract ventilation to emission points when contact with warm (>50°C) lubricant is likely. Wear chemical-resistant gloves (tested to EN374) in combination with intensive management supervision controls. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Contributing scenario controlling worker exposure for 7: Storage

Operational conditions affecting workers exposure.

Risk management measures : Store substance within a closed system.

Section 2.2 Conditions of use affecting exposure. (Industrial - Environment)

Contributing scenario controlling environmental exposure for 8: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

Amounts used : Annual amount used in the EU: 2.63 E+03 Tonnes/year
Fraction of EU tonnage used in region: 0.1
Fraction of regional tonnage used locally: 0.1

Frequency and duration of use : Emission days: 300 days per year

Other conditions affecting environmental exposure

Emission factor (Air, Water, Soil) : Negligible wastewater emissions as process operates without water contact.
Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 5.00 E-05
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant): 2.00 E-11
Release fraction to soil from process (after typical onsite RMMs): 0

Environmental factors not influenced by risk management measures.

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

Risk management measures

Technical measures : Prevent discharge of undissolved substance to or recover from onsite wastewater. User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system.

Waste treatment methods :

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil.

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils.
Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via on-site sewage treatment: 0.1%
Assumed on-site sewage treatment plant flow: 2.00 E+03 m³/d
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 1.39 E+05 kg/day

Disposal Methods : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Section 2.2 Conditions of use affecting exposure. (Industrial - Environment)

Contributing scenario controlling environmental exposure for 9: Use of functional fluid industrial site

Amounts used : Annual amount used in the EU: 2.63 E+03 Tonnes/year
Fraction of EU tonnage used in region: 0.1
Fraction of regional tonnage used locally: 0.1

Frequency and duration of use : Emission days: 300 days per year

Other conditions affecting environmental exposure

Emission factor (Air, Water, Soil) : Negligible wastewater emissions as process operates without water contact.
Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 5.00 E-05
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant): 2.00 E-11
Release fraction to soil from process (after typical onsite RMMs): 0

Environmental factors not influenced by risk management measures.

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

Risk management measures

Technical measures : Prevent discharge of undissolved substance to or recover from onsite wastewater. User sites are assumed to be provided with oil/water separators and for waste water to be discharged via public sewer system.

Waste treatment methods :

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil.

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils.
Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via on-site sewage treatment: 0.1%
Assumed on-site sewage treatment plant flow: 2.00 E+03 m³/d
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 1.39 E+05 kg/day

Disposal Methods : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Section 3 EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Exposure estimation and reference to its source - All Contributing Scenarios

Assessment method : easyTRA or ECOTOC

EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE : The risk management measures/operation conditions that are identified in the exposure scenario are the outcome of a quantitative and qualitative assessment that cover the product.

Environmental hazards are possible in cases of inappropriate handling or disposal. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4 Guidance to check compliance with the exposure scenario

Environment:

Guidance : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Health:

Section 4 Guidance to check compliance with the exposure scenario

Guidance

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

Identification of the substance or mixture

Product name : HiTEC® 350G Performance Additive
Product definition : Mixture

Section 1 Title

Short title of the exposure scenario : General use of lubricants and greases in vehicles or machinery - Professional

List of use descriptors : **Identified use name:** General use of lubricants and greases in vehicles or machinery - Professional
Process Category: PROC01, PROC02, PROC08a, PROC08b, PROC20
Substance supplied to that use in form of: In a mixture
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09a, ERC09b
Market sector by type of chemical product: PC24
Article category related to subsequent service life: AC01

Environmental contributing scenarios : **Widespread use of functional fluid (indoor)** - ERC09a
Widespread use of functional fluid (outdoor) - ERC09b

Health Contributing scenarios : **General measures applicable to all activities**
Operation of equipment containing engine oils and similar. Use in contained systems. - PROC01
Material transfers. Non-dedicated facility. - PROC08a
Equipment cleaning and maintenance. Dedicated facility. - PROC08b, PROC20
Storage. - PROC01, PROC02

Processes and activities covered by the exposure scenario : Covers general use of lubricants and greases in vehicles or machinery in closed systems. Includes filling and draining of containers and operation of enclosed machinery (including engines) and associated maintenance and storage activities.

Section 2.1 Conditions of use affecting exposure. (Workers - Health)**Contributing scenario controlling worker exposure for 1: General measures applicable to all activities****Operational conditions affecting workers exposure.**

Risk management measures : Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.

Contributing scenario controlling worker exposure for 2: Operation of equipment containing engine oils and similar. Use in contained systems.**Operational conditions affecting workers exposure.**

Risk management measures : No other specific measures identified.

Contributing scenario controlling worker exposure for 3: Material transfers. Non-dedicated facility.**Operational conditions affecting workers exposure.**

Risk management measures : Avoid carrying out operation for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Contributing scenario controlling worker exposure for 4: Equipment cleaning and maintenance. Dedicated facility.**Operational conditions affecting workers exposure.**

Risk management measures : Drain down and flush system prior to equipment break-in or maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Contributing scenario controlling worker exposure for 5: Storage.**Operational conditions affecting workers exposure.**

Risk management measures : Store substance within a closed system.

Section 2.2 Conditions of use affecting exposure. (Professional - Environment)**Contributing scenario controlling environmental exposure for 0: Widespread use of functional fluid (indoor)**

Section 2.2 Conditions of use affecting exposure. (Professional - Environment)

Amounts used : Annual amount used in the EU: 5.39 E+03 Tonnes/year
Fraction of EU tonnage used in region: 0.1
Fraction of regional tonnage used locally: 0.1

Frequency and duration of use : Emission days: 365 days per year

Other conditions affecting environmental exposure

Emission factor (Air, Water, Soil) : Negligible wastewater emissions as process operates without water contact.
Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 5.00 E-04
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant): 5.00 E-04
Release fraction to soil from process (after typical onsite RMMs): 1.00 E-03

Environmental factors not influenced by risk management measures.

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

Risk management measures

Technical measures : Prevent discharge of undissolved substance to or recover from onsite wastewater.

Waste treatment methods :

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil.

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils.
Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via municipal sewage treatment: 0.1%
Assumed on-site sewage treatment plant flow: 2.00 E+03 m³/d
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 1.40 E+03 kg/day

Disposal Methods : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Contributing scenario controlling environmental exposure for 6: Widespread use of functional fluid (outdoor)

Amounts used : Annual amount used in the EU: 5.39 E+03 Tonnes/year
Fraction of EU tonnage used in region: 0.1
Fraction of regional tonnage used locally: 0.1

Frequency and duration of use : Emission days: 365 days per year

Other conditions affecting environmental exposure

Emission factor (Air, Water, Soil) : Negligible wastewater emissions as process operates without water contact.
Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 5.00 E-04
Release fraction to wastewater from process (after typical onsite RMMs and before (municipal) sewage treatment plant): 5.00 E-04
Release fraction to soil from process (after typical onsite RMMs): 1.00 E-03

Environmental factors not influenced by risk management measures.

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

Risk management measures

Technical measures : Prevent discharge of undissolved substance to or recover from onsite wastewater.

Waste treatment methods :

Technical onsite conditions and measures to reduce or limit discharges to air, water and soil.

Organizational measures to prevent/limit release from site : Do not apply industrial sludge to natural soils.
Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Conditions and measures related to sewage treatment plant : Estimated substance removal from wastewater via municipal sewage treatment: 0.1%
Assumed on-site sewage treatment plant flow: 2.00 E+03 m³/d
Maximum allowable site tonnage (M_{safe}) based on release following total wastewater treatment removal: 1.40 E+03 kg/day

Disposal Methods : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Section 3 EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE

Exposure estimation and reference to its source - All Contributing Scenarios

Assessment method : easyTRA or ECOTOC

EXPOSURE ESTIMATION AND REFERENCE TO ITS SOURCE : The risk management measures/operation conditions that are identified in the exposure scenario are the outcome of a quantitative and qualitative assessment that cover the product.

Environmental hazards are possible in cases of inappropriate handling or disposal. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4 Guidance to check compliance with the exposure scenario

Environment:

Guidance : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Health:

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