Safety Data Sheet

HiTEC® 12200 Performance Additive

SDS no. H12200

Section 1. Identification

Product identifier : HiTEC® 12200 Performance Additive

Product use : Petrochemical industry: Lubricating Oil Additive.

Date of issue/Revisions : 2 May 2023

In case of emergency - Chemical

+1-703-527-3887 (International)
+65-3158-1349 (Asia Pacific)
+61-290372994 (Australia)
4001-204937 (China)
+81-345209637 (Japan)
00-308-13-2549 (South Korea)
+1-703-741-5979 (Spanish language)
+44-870-8200418 (UK)
1-800-424-9300 (US & Canada)

Manufacturer / Supplier

Afton Chemical Asia Pte. Ltd.
103 Penang Road
#09-01 Visioncrest Commercial
Singapore 238467
Telephone number: +65 6732 0822
Fax: +65 6737 4123

Afton Chemical (Suzhou) Co., Ltd.
No. 26 Pingsheng Road,
Suzhou Industrial Park, Suzhou
215126 China
Tel: +86-512-62605099

Afton Chemical (Beijing) Co., Ltd.
Room 707 China World Office 1
No. 1 Jian Guo Men Wai Avenue
Beijing 100004 China
Telephone number: +86 10 6535 0000

Afton Chemical Japan Corporation
Hirakawacho Mori Tower 7F, 2-16-1
Hirakawacho, Chiyoda-ku
Tokyo
Japan

Afton Chemical Asia Pacific Company
Level 12, 20 Berry Street
North Sydney, NSW 2060
Australia
Telephone number: +61 299785800
Business Hours: 9:00am - 5:00pm

Afton Chemical Korea Co., Ltd.
511 Yeongdong-daero, Gangnam-gu,
27th Floor Trade Tower
Seoul City 06164
Republic of Korea
Telephone number: +82- 2 -2191-4000

Afton Chemical Corporation
500 Spring St.
Richmond, VA 23219
USA

Non-Emergency Telephone: +1-804-788-5800

Section 2. Hazards identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 3
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes mild skin irritation.
Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : Avoid release to the environment.

Response : If skin irritation occurs: Get medical advice or attention.

Storage : Store in a well-ventilated place.

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

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

Please note some GHS hazard classifications listed above may not be applicable in your country or region and are shown for informational purposes only.

For other GHS hazard classifications not listed above, the classification is not applicable in your region.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	%	GHS Classification	Type
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	≥15 - ≤25	Not classified.	[2]
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	≥10 - ≤15	ASPIRATION HAZARD - Category 1	[1] [2]
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4	≥5 - ≤10	Not classified.	[2]
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	122384-87-6	≥5 - ≤10	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4	[1]
Phosphorodithioic acid, mixed O,O-bis (2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	85940-28-9	≥3 - ≤5	ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	[1]

Section 3. Composition/information on ingredients

			SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2	
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	84605-29-8	≥3 - ≤5	ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2	[1]
bis(nonylphenyl)amine	36878-20-3	≥1 - ≤3	SKIN CORROSION/IRRITATION - Category 3	[1]
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	≥1 - ≤3	Not classified.	[2]
Distillates (petroleum), solvent-dewaxed light paraffinic	64742-56-9	≥1 - ≤3	Not classified.	[2]
phenol, (tetrapropenyl) deriva-tives	74499-35-7	≥0.1 - <0.3	ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 REPRODUCTIVE TOXICITY (Fertility) - Category 1B SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 (M=10) LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 (M=10)	[1]

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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 and hence require reporting in this section.

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

Please note some GHS hazard classifications listed above may not be applicable in your country or region and are shown for informational purposes only.

Type

[1] Substance classified with a physical, health or environmental hazard
[2] Substance with a workplace exposure limit

Section 4. First aid measures

Description of necessary 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. If irritation persists, get medical attention.

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 adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 15 minutes.

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.

Most important symptoms/effects, 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 : Causes mild skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

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 4. First aid measures

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.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO_2.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful 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
metal oxide/oxides
Hydrogen sulphide

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. Take precautions to limit storage vessel surface temperature to below 121°C (250°F).

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.

Section 6. Accidental release measures

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 spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised 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".

Environmental precautions : Avoid dispersal of spilt 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.

Section 6. Accidental release measures

Methods and material 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 the 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

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 vapour 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.

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.

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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

The following information is provided for health and safety purposes. Please refer to individual product specification documents for quality-related storage and handling.
Preferred storage temperature is between ambient and 70°C.
Exposure to elevated temperatures will increase the rate of hydrogen sulfide (H2S) and mercaptan generation.
Temperatures above 90°C should be avoided unless an appropriate engineering review has been conducted on the process.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	**Safe Work Australia (Australia, 12/2019).** TWA: 5 mg/m³ 8 hours. Form: Mist
Distillates (petroleum), solvent-dewaxed heavy paraffinic	**Safe Work Australia (Australia, 12/2019).** TWA: 5 mg/m³ 8 hours. Form: Mist
Distillates (petroleum), solvent-refined heavy paraffinic	**Safe Work Australia (Australia, 12/2019).** TWA: 5 mg/m³ 8 hours. Form: Mist
Distillates (petroleum), hydrotreated light paraffinic	**Safe Work Australia (Australia, 12/2019).** TWA: 5 mg/m³ 8 hours. Form: Mist
Distillates (petroleum), solvent-dewaxed light paraffinic	**Safe Work Australia (Australia, 12/2019).** TWA: 5 mg/m³ 8 hours. Form: Mist

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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.

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. 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.

Other skin protection : Appropriate footwear and any additional skin protection measures 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 : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Physical state	:	Liquid. [Viscous]
Colour	:	Brown. [Dark]
Odour	:	Not available.
Odour threshold	:	Not available.
pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	Not available.
Flash point	:	Closed cup: 135°C (275°F) [Pensky-Martens Minimum]
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.
Vapour pressure	:	Not available.
Relative vapour density	:	Not available.
Vapour density	:	Not available.
Density	:	0.989 g/cm³ [60.1°F (15.6°C)]
Relative density	:	0.989
Solubility(ies)	:	Not available.
Partition coefficient: n-octanol/water	:	Not applicable.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic (40°C): 4100 mm^2/s (4100 cSt) Minimum 190 cSt @ 100°C
Explosive properties	:	Not available.
Oxidising properties	:	Not available.
Particle characteristics		
Median particle size	:	Not applicable.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	High temperatures, sparks, and open flames.

Section 10. Stability and reactivity

Incompatible materials : Strong oxidising and reducing agents.

Hazardous decomposition products : Hydrogen sulphide

Section 11. Toxicological information

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	Based on data for a similar substance.
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>5.53 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	-
Distillates (petroleum), solvent-refined heavy paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>5.53 mg/l	4 hours	Based on data for a similar substance.
	None available.	LD50 Dermal	Rabbit	>2000 mg/kg	-	-
	None available.	LD50 Oral	Rat	>5000 mg/kg	-	-
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>1.67 mg/l	1 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>4000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	-
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>2.3 mg/l	4 hours	Based on data for a similar substance.
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>20000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	3080 mg/kg	-	-
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>2.3 mg/l	4 hours	-
	402 Acute Dermal Toxicity	LD50 Dermal	Rat	>2002 mg/kg	-	-
	401 Acute Oral	LD50 Oral	Rat	3100 mg/kg	-	-

Section 11. Toxicological information

	Toxicity					
bis(nonylphenyl)amine	402 Acute Dermal Toxicity	LD50 Dermal	Rat	>2000 mg/kg	-	Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	Based on data for a similar substance.
Distillates (petroleum), hydrotreated light paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat	>5.53 mg/l	4 hours	Based on data for a similar substance.
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	403 Acute Inhalation Toxicity	LC50 Inhalation Vapour	Rat	>2.18 mg/l	4 hours	Based on data for a similar substance.
	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	>5000 mg/kg	-	Based on data for a similar substance.
	401 Acute Oral Toxicity	LD50 Oral	Rat	>5000 mg/kg	-	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	402 Acute Dermal Toxicity	LD50 Dermal	Rabbit	15000 mg/kg	-	-
	401 Acute Oral Toxicity	LD50 Oral	Rat	2200 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	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Severe irritant	Not H319 at <15%. On basis of test data. Not H318 at <20%. On basis of test data.

Section 11. Toxicological information

	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Irritant	Not H315 at <15%. On basis of test data.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Severe irritant	Not H319 at <15%. On basis of test data. Not H318 at <20%. On basis of test data.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Irritant	Not H315 at <15%. On basis of test data.
bis(nonylphenyl)amine	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant	Based on data for a similar substance.
Distillates (petroleum), hydrotreated light paraffinic	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Mild irritant	Based on data for a similar substance. WOE does not support classification
	None available.	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Not an Irritant	Based on data for a similar substance.
	None available.	Rabbit	Skin - Not an Irritant	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Visible necrosis	-
	404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Visible necrosis	-

Skin : Causes mild skin irritation.

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.

Sensitisation

Product/ingredient name	Test	Route of exposure	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	406 Skin Sensitization	skin	Guinea pig	Ambiguous	WOE does not support classification
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-
bis(nonylphenyl)amine	406 Skin	skin	Guinea pig	Not	Based on data for a

Section 11. Toxicological information

	Sensitization			sensitizing	similar substance.
Distillates (petroleum), hydrotreated light paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	406 Skin Sensitization	skin	Guinea pig	Not sensitizing	-

Conclusion/Summary

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

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

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 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
	474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Based on data for a similar substance.
	473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Based on data for a similar substance.
	473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	None available.	Experiment: In vitro Subject: Mammalian-Animal	Positive	Based on data for a similar substance. WOE does not support classification
	471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	-
	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Positive	WOE does not support classification
	471 Bacterial Reverse	Experiment: In vitro	Negative	-

Section 11. Toxicological information

	Mutation Test 474 Mammalian Erythrocyte Micronucleus Test	Subject: Bacteria Experiment: In vivo Subject: Mammalian-Animal	Negative	-
bis(nonylphenyl)amine	471 Bacterial Reverse Mutation Test 473 In vitro Mammalian Chromosomal Aberration Test 478 Genetic Toxicology: Rodent Dominant Lethal Test	Experiment: In vitro Subject: Bacteria Experiment: In vitro Subject: Mammalian-Animal Experiment: In vitro Subject: Mammalian-Animal	Negative Negative Negative	Based on data for a similar substance. Based on data for a similar substance. Based on data for a similar substance.
Distillates (petroleum), hydrotreated light paraffinic	471 Bacterial Reverse Mutation Test 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Bacteria Experiment: In vitro Subject: Mammalian-Animal	Negative Negative	Based on data for a similar substance. Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	471 Bacterial Reverse Mutation Test 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Bacteria Experiment: In vitro Subject: Mammalian-Animal	Negative Negative	Based on data for a similar substance. Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	471 Bacterial Reverse Mutation Test 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Bacteria Experiment: In vitro Subject: Mammalian-Animal	Negative Negative	- -

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

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	451 Carcinogenicity Studies	Mouse	78 weeks	Negative - Dermal - NOAEL	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	451 Carcinogenicity Studies	Mouse	78 weeks	Negative - Dermal - NOAEL	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	451 Carcinogenicity Studies	Mouse	78 weeks	Negative - Dermal - NOAEL	Based on data for a similar substance.

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	Developmental 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.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Dermal	Rat	Negative	Negative	Negative	Based on data for a similar substance.
	421 Reproduction/ Developmental	Oral	Rat	Negative	Negative	Negative	Based on data for a

Section 11. Toxicological information

	Toxicity Screening Test						similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	415 One-Generation Reproduction Toxicity Study	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Distillates (petroleum), hydrotreated light paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	421 Reproduction/ Developmental Toxicity Screening Test	Oral	Rat	Negative	Negative	Negative	Based on data for a similar substance.
phenol, (tetrapropenyl) deriva-tives	416 Two-Generation Reproduction Toxicity Study	Oral	Rat	Positive	Positive	Positive	-

Conclusion/Summary : North America and South America GHS classification: May damage fertility.
For other regional GHS classifications: Not classified.

Teratogenicity

Product/ingredient name	Test	Species	Result	Remarks
Distillates (petroleum), hydrotreated heavy paraffinic	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	414 Prenatal Developmental Toxicity Study	Rat	Negative - Oral	-
bis(nonylphenyl)amine	414 Prenatal Developmental Toxicity Study	Rat	Negative - Oral	-
Distillates (petroleum), hydrotreated light paraffinic	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light	414 Prenatal Developmental Toxicity Study	Rat	Negative - Dermal	Based on data for a similar substance.

Section 11. Toxicological information

paraffinic				

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

Specific target organ toxicity (single exposure)

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

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

Name	Result
Distillates (petroleum), solvent-dewaxed heavy paraffinic	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : Skin, Eyes, Ingestion, and Inhalation

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes mild skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

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

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

Section 11. Toxicological information

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.
	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rabbit	1000 mg/kg	-	Sub-acute NOAEL Dermal	Based on data for a similar substance.
	411 Subchronic Dermal Toxicity: 90-day Study	Rat	30 mg/kg	-	Sub-chronic NOAEL Dermal	Based on data for a similar substance.
	None available.	Rat	0.15 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	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.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	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	0.05 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Vapour	-
Distillates (petroleum), solvent-refined heavy paraffinic	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	0.15 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Vapour	Based on data for a similar substance.
	None available.	Rat	0.22 mg/l	28 days	Sub-acute NOAEL Inhalation Vapour	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rat	250 mg/kg	-	Sub-acute NOAEL Dermal	-
	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Rat	200 mg/kg	-	Sub-acute NOAEL Oral	-
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	125 mg/kg	-	Sub-acute NOAEL Oral	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental	Rat	160 mg/kg	-	Sub-acute NOAEL Oral	Based on data for a similar substance.

Section 11. Toxicological information

	Toxicity Screening Test					
bis(nonylphenyl)amine	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	100 mg/kg	-	Sub-chronic LOAEL Oral	-
Distillates (petroleum), hydrotreated light paraffinic	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rabbit	1000 mg/kg	-	Sub-acute NOAEL Dermal	Based on data for a similar substance.
	411 Subchronic Dermal Toxicity: 90-day Study	Rat	30 mg/kg	-	Sub-chronic NOAEL Dermal	Based on data for a similar substance.
	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	125 mg/kg	-	Sub-chronic NOAEL Oral	Based on data for a similar substance.
	None available.	Rat	0.15 mg/l	13 weeks	Sub-chronic NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
	None available.	Rat	0.22 mg/l	4 weeks	Sub-acute NOAEL Inhalation Dusts and mists	Based on data for a similar substance.
	412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study	Rat	0.05 mg/l	4 weeks	Sub-acute NOAEL Inhalation Dusts and mists	-
Distillates (petroleum), solvent-dewaxed light 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.
	410 Repeated Dose Dermal Toxicity: 21/28-day Study	Rat	1000 mg/kg	-	Sub-chronic NOAEL Dermal	Based on data for a similar substance.
	None available.	Rat	0.98 mg/l	4 weeks	Sub-acute NOAEL Inhalation Vapour	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	407 Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	60 mg/kg	-	Sub-acute NOAEL Oral	-
	416 Two-Generation Reproduction Toxicity Study	Rat	15 mg/kg	-	Sub-chronic NOAEL Oral	-
	408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	100 mg/kg	-	Sub-chronic NOAEL Oral	-

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.

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.

Section 11. Toxicological information

Section 12. Ecological information

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.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL 1000 mg/l	Fish - Oncorhynchus mykiss	14 days	QSAR result.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL 1000 mg/l	Fish - Oncorhynchus mykiss	14 days	QSAR result.
Distillates (petroleum), solvent-refined heavy paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL 1000 mg/l	Fish - Oncorhynchus mykiss	14 days	QSAR result.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	Acute EL50 >500 mg/l	Algae - Pseudokirchneriella subcapitata	96 hours	-
	Acute EL50 >1000 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 >10000 mg/l	Micro-organism	3 hours	Based on data for a similar

Section 12. Ecological information

				substance.
	Acute LL50 >1000 mg/l	Fish - Pimephales promelas	96 hours	-
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	Acute EL50 2.1 mg/l	Algae - Selenastrum capricornutum	96 hours	Based on data for a similar substance.
	Acute EL50 5.4 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute EL50 >10000 mg/l	Micro-organism	3 hours	Based on data for a similar substance.
	Acute LL50 4.5 mg/l	Fish - Oncorhynchus mykiss	96 hours	Based on data for a similar substance.
	Chronic NOEL 1 mg/l	Algae - Selenastrum capricornutum	96 hours	Based on data for a similar substance.
	Chronic NOEL 0.4 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	Acute EL50 24 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Acute EL50 23 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 >10000 mg/l	Micro-organism	3 hours	-
	Acute LL50 4.5 mg/l	Fish - Oncorhynchus mykiss	96 hours	-
	Chronic NOEC 10 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Chronic NOEL 0.4 mg/l	Daphnia - Daphnia magna	21 days	-
bis(nonylphenyl)amine	Acute EL50 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Acute EL50 >100 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute IC50 >100 mg/l	Micro-organism	3 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Danio rerio	96 hours	Based on data for a similar substance.
	Chronic EL10 >100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	-
	Chronic EL10 4.12 mg/l Fresh water	Crustaceans - Daphnia magna	21 days	-
	Chronic NOEL 10 mg/l Fresh water	Fish - Danio rerio	34 days	-
Distillates (petroleum), hydrotreated light paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.

Section 12. Ecological information

	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL ≥1000 mg/l	Fish - Oncorhynchus mykiss	14 days	-
Distillates (petroleum), solvent-dewaxed light paraffinic	Acute EL50 >10000 mg/l	Daphnia - Daphnia magna	48 hours	Based on data for a similar substance.
	Acute LL50 >100 mg/l	Fish - Pimephales promelas	96 hours	Based on data for a similar substance.
	Chronic NOEL ≥100 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours	Based on data for a similar substance.
	Chronic NOEL 10 mg/l	Daphnia - Daphnia magna	21 days	Based on data for a similar substance.
	Chronic NOEL ≥1000 mg/l	Fish - Oncorhynchus mykiss	14 days	QSAR
phenol, (tetrapropenyl) derivatives	Acute EL50 0.36 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Acute EL50 0.037 mg/l	Daphnia - Daphnia magna	48 hours	-
	Acute EL50 >1000 mg/l	Micro-organism	3 hours	-
	Acute LL50 40 mg/l	Fish - Pimephales promelas	96 hours	-
	Chronic NOEL 0.07 mg/l	Algae - Desmodesmus subspicatus	72 hours	-
	Chronic NOEL 0.0037 mg/l	Daphnia - Daphnia magna	21 days	-

Conclusion/Summary : Harmful to aquatic life with long lasting effects.

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.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
Distillates (petroleum), solvent-refined heavy paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	OECD 301B Ready Biodegradability -	13.4 % - Not readily - 28 days	Based on data for a similar substance.

Section 12. Ecological information

	CO2 Evolution Test		
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	OECD 301B Ready Biodegradability - CO2 Evolution Test	1.5 % - Not readily - 28 days	Based on data for a similar substance.
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	OECD 301B Ready Biodegradability - CO2 Evolution Test	1.5 % - Not readily - 28 days	-
bis(nonylphenyl)amine	OECD 301C Ready Biodegradability - Modified MITI Test (I)	24 % - Not readily - 28 days	-
Distillates (petroleum), hydrotreated light paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
Distillates (petroleum), solvent-dewaxed light paraffinic	OECD 301F Ready Biodegradability - Manometric Respirometry Test	31 % - Not readily - 28 days	Based on data for a similar substance.
phenol, (tetrapropenyl) derivatives	OECD 301B Ready Biodegradability - CO2 Evolution Test	6 to 25 % - Not readily - 28 days	-

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Distillates (petroleum), solvent-refined heavy paraffinic	3.9 to 6	-	high
Phenol, tetrapropylene-, sulfurized, carbonates, calcium salts, overbased	9.5	-	high
Phosphorodithioic acid, mixed O,O-bis (1,3-dimethylbutyl and iso-Pr) esters, zinc salts	0.56	-	low
bis(nonylphenyl)amine	3.64 to 7.02	1730	high
phenol, (tetrapropenyl) derivatives	-	289 to 1601	high

Mobility in soil

Section 12. Ecological information

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

Mobility : Not available.

Hazardous to the ozone layer : Not applicable.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	ADG	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class (es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

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 IMO instruments : Not available.

Section 15. Regulatory information

China

List of Goods banned for Importing

None of the components are listed.

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Singapore

Singapore - hazardous chemicals under government control

Ingredient name	Status
Anionic surface active agent	Listed

Australia

Standard for the Uniform Scheduling of Medicines and Poisons

Not applicable.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Japan

Fire Service Law

Category	Substance name/Type	Danger category
Category IV	Class III petroleums	III

Industrial Safety and Health Act

Label Requirements and Chemicals Requiring Notification

Ingredient name	%
Mineral oil Molybdenum and its compounds	≥35 - ≤45 ≥0.10 - ≤0.30

Chemical Substances Control Law (CSCL)

None of the components are listed.

Poisonous and Deleterious Substances

None of the components are listed.

Pollutant Release and Transfer Registers (PRTR)

None of the components are listed.

Japan - Water Pollution Control Law

Section 15. Regulatory information

Ingredient name

n-Hexane Extracts (mineral oil)
Zinc compounds
Phenol derivative compounds
Boron compounds

Korea

Regulation according to ISHA

ISHA article 117 (Harmful substances prohibited from manufacture) : None of the components are listed.

ISHA article 118 (Harmful substances requiring permission) : None of the components are listed.

Regulation according to K-REACH/CCA

	Chemical name	%	Remarks
K-REACH/CCA Toxic chemicals :	diphenylamine	<0.1	Impurity

K-REACH/CCA - Banned : None of the components are listed.

K-REACH/CCA - Restricted : None of the components are listed.

K-REACH/CCA Article - TRI : The following components are listed: Zinc and its compounds, Boron compounds

Dangerous Materials Safety Management Act : **Class:** Class 4 - Flammable Liquid
Item: 5. Class 3 petroleums - Water-insoluble liquid
Threshold: 2000 L
Danger category: III
Signal word: Contact with sources of ignition prohibited

International Inventory Status

Australia (AIIC) : All components are listed or exempted.

Canada (DSL/NDSL) : All components are listed or exempted.

China (IECSC) : At least one component is not listed.
Notified. Please contact your supplier for information on the inventory status of this material.

Europe (REACh) : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).

Japan (ENCS) : At least one component is not listed.
Notified. Please contact your supplier for information on the inventory status of this material.

Republic of Korea (ECL) : At least one component is not listed.
Exempted. Please contact your supplier for information on the inventory status of this material.

Section 15. Regulatory information

New Zealand (NZIoC) : All components are listed or exempted.

Philippines (PICCS) : All components are listed or exempted.

Switzerland (SWISS) : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).

Turkey (KKDIK) : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).

Taiwan (TCSI) : All components are listed or exempted.

United Kingdom (UK REACh) : For information on compliance with this regulation please contact your Afton representative (EHS.CustomerVolumes@AftonChemical.com).

United States Active (TSCA) : All components are active or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 5/2/2023

EHS Department (Tel: +1 804 788 5800)

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations
WOE = Weight of Evidence

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method Calculation method Calculation method

Toxicological and Ecotoxicological Test Data Summary(s) : CMR_A1, CORR_A21

Indicates information that has changed from previously issued version.

Notice to reader

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

Section 16. Other information

resulting from the use or reliance upon the information and recommendations.