Wilhelmsen Ships Service

Product brands by Wilhelmsen

UNITOR NALFLEET Unicool NAVADAN

DieselPower Enhancer

Wilhelmsen Ships Service AS* Central Warehouse

Part Number: **777190**
Version No: **6.37**
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: **16/02/2024**
Print Date: **19/07/2024**
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SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	DieselPower Enhancer
Chemical Name	Not Applicable
Synonyms	Product Part No 777190 (25L) (Hydrocarbons, C10, aromatics, <1% naphtalene (ECNo 918-811-1 eq to CasNo: 64742-94-5), Hydrocarbones, C11-C14, aromatics, n-alkanes, isoalkanes, cyclics <2%aromatics (ECNo 926-141-6 eq to CasNo: 64742-47-8) Pr No: 314591
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains solvent naphtha petroleum, heavy aromatic and naphthalene)
Chemical formula	Not Applicable
Other means of identification	777190 | UFI:UJXV-R00R-G003-7NU4

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

Procedural Category	PROC16	Use of fuels
Chemical Product Category	PC13	Fuels
Sectors of Use	SU3	Industrial uses
Relevant identified uses	Fuel oil treatment	
Uses advised against	No specific uses advised against are identified.	

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	**Wilhelmsen Ships Service AS* Central Warehouse**	**Outback (M)SDS portal: http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen**
Address	Willem Barentszstraat 50 Rotterdam Netherlands	--------Use our Outback portal to obtain our (M)SDSs in other languages and/or format.--------- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com --------- Norway
Telephone	+31 10 4877 777	Not Available
Fax	Not Available	Not Available
Website	http://www.wilhelmsen.com	http://www.wilhelmsen.com
Email	wss.rotterdam@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com

1.4. Emergency telephone number

Association / Organisation	**Dutch nat. poison centre**	**24hrs - Chemwatch**	**CHEMWATCH EMERGENCY RESPONSE (24/7)**
Emergency telephone numbers	**+ 31 88 7558561**	**+31-10-4877700**	**+61 3 9573 3188**
Other emergency telephone numbers	**+ 31 10 4877700**	**+31-10-4877700**	**Not Available**

Page 1 continued...

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]	H304 - Aspiration Hazard Category 1, H336 - Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H351 - Carcinogenicity Category 2, H411 - Hazardous to the Aquatic Environment Long-Term Hazard Category 2
Legend:	***1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI***

2.2. Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.

Supplementary statement(s)

EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains Tetraethylenepentamine linear, cyclic and branched. May produce an allergic reaction.

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and protective clothing.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P391	Collect spillage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

Continued...

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

Material contains Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**, solvent naphtha petroleum, heavy aromatic, naphthalene, Tetraethylenepentamine linear, cyclic and branched.

2.3. Other hazards

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No 3.Index No 4.REACH No	% [weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. Not Available 2.Not Available 3.Not Available 4.Not Available	25-40	Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**	Aspiration Hazard Category 1, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H304, H336, H411, EUH066 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 64742-94-5* 2.265-198-5 3.649-424-00-3 4.Not Available	5-15	solvent naphtha petroleum, heavy aromatic	Aspiration Hazard Category 1, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H304, H336, H411, EUH066 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 91-20-3 2.202-049-5 3.601-052-00-2 4.Not Available	1-3	naphthalene *	Acute Toxicity (Oral) Category 4, Carcinogenicity Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H302, H351, H400, H410 [2]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 128-39-2* 2.204-884-0 3.Not Available 4.Not Available	1-3	2,6-di-tert-butylphenol	Skin Corrosion/Irritation Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H315, H400, H410 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available
1. 112-57-2* 2.203-986-2 3.612-060-00-0 4.Not Available	<1	Tetraethylenepentamine linear, cyclic and branched	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 1B, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H302, H312, H314, H317, H318, H411 [1]	Not Available Acute M factor: Not Available Chronic M factor: Not Available	Not Available

Legend:	***1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties***

Continued...

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ▸ Wash out immediately with water. ▸ If irritation continues, seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

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

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

for naphthalene intoxication: Naphthalene requires hepatic and microsomal activation prior to the production of toxic effects. Liver microsomes catalyse the initial synthesis of the reactive 1,2-epoxide intermediate which is subsequently oxidised to naphthalene dihydrodiol and alpha-naphthol. The 2-naphthoquinones are thought to produce haemolysis, the 1,2-naphthoquinones are thought to be responsible for producing cataracts in rabbits, and the glutathione-adducts of naphthalene-1,2-oxide are probably responsible for pulmonary toxicity. Suggested treatment regime:

- Induce emesis and/or perform gastric lavage with large amounts of warm water where oral poisoning is suspected.
- Instill a saline cathartic such as magnesium or sodium sulfate in water (15 to 30g).
- Demulcents such as milk, egg white, gelatin, or other protein solutions may be useful after the stomach is emptied but oils should be avoided because they promote absorption.
- If eyes/skin contaminated, flush with warm water followed by the application of a bland ointment.
- Severe anaemia, due to haemolysis, may require small repeated blood transfusions, preferably with red cells from a non-sensitive individual.
- Where intravascular haemolysis, with haemoglobinuria occurs, protect the kidneys by promoting a brisk flow of dilute urine with, for example, an osmotic diuretic such as mannitol. It may be useful to alkalinise the urine with small amounts of sodium bicarbonate but many researchers doubt whether this prevents blockage of the renal tubules.
- Use supportive measures in the case of acute renal failure. GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, 5th Ed.

SECTION 5 Firefighting measures

5.1. Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

5.3. Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location.
Fire/Explosion Hazard	

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

Continued...

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	Environmental hazard - contain spillage. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment. ▸ Contain and absorb spill with sand, earth, inert material or vermiculite. ▸ Wipe up. ▸ Place in a suitable, labelled container for waste disposal.
Major Spills	Environmental hazard - contain spillage. Moderate hazard. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ No smoking, naked lights or ignition sources. ▸ Increase ventilation.

6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ Avoid smoking, naked lights or ignition sources. ▸ Avoid contact with incompatible materials. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin
Fire and explosion protection	See section 5
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	None known
Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)	E2: Hazardous to the Aquatic Environment in Category Chronic 2
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	E2 Lower- / Upper-tier requirements: 200 / 500

+	x	+	o	+	+	+

X — *Must not be stored together*
0 — *May be stored together with specific preventions*
\+ — *May be stored together*

Continued...

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
solvent naphtha petroleum, heavy aromatic	Dermal 0.95 mg/kg bw/day (Systemic, Chronic) Inhalation 2.31 mg/m³ (Systemic, Chronic) Inhalation 2.31 mg/m³ (Local, Chronic) Inhalation 384 mg/m³ (Systemic, Acute) Inhalation 160.23 mg/m³ (Local, Acute) ***Dermal 0.28 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 0.69 mg/m³ (Systemic, Chronic) **** ***Oral 0.03 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 0.69 mg/m³ (Local, Chronic) **** ***Inhalation 226 mg/m³ (Systemic, Acute) **** ***Oral 25.6 mg/kg bw/day (Systemic, Acute) **** ***Inhalation 143.5 mg/m³ (Local, Acute) ****	Not Available
naphthalene	Dermal 3.57 mg/kg bw/day (Systemic, Chronic) Inhalation 25 mg/m³ (Systemic, Chronic) Inhalation 25 mg/m³ (Local, Chronic)	2.4 µg/L (Water (Fresh)) 20 µg/L (Water - Intermittent release) 2.4 µg/L (Water (Marine)) 67.2 µg/kg sediment dw (Sediment (Fresh Water)) 67.2 µg/kg sediment dw (Sediment (Marine)) 53.3 µg/kg soil dw (Soil) 2.9 mg/L (STP)
2,6-di-tert-butylphenol	Dermal 0.5 mg/kg bw/day (Systemic, Chronic) Inhalation 3.5 mg/m³ (Systemic, Chronic) ***Dermal 6.75 mg/kg bw/day (Systemic, Chronic) **** ***Inhalation 20.9 mg/m³ (Systemic, Chronic) **** ***Oral 6.75 mg/kg bw/day (Systemic, Chronic) ****	0.001 mg/L (Water (Fresh)) 0.004 mg/L (Water - Intermittent release) 0 mg/L (Water (Marine)) 0.317 mg/kg sediment dw (Sediment (Fresh Water)) 0.032 mg/kg sediment dw (Sediment (Marine)) 0.697 mg/kg soil dw (Soil) 10 mg/L (STP) 60 mg/kg food (Oral)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	naphthalene	Naphthalene	10 ppm / 50 mg/m3	Not Available	Not Available	Not Available
Iceland Occupational Exposure Limits	naphthalene	Naphthalene	10 ppm / 50 mg/m3	Not Available	Not Available	Not Available
Europe ECHA Occupational exposure limits substance evaluations	naphthalene	Not Available	Not Available	Not Available	Not Available	Not Available
Iceland Occupational Exposure Limits	2,6-di-tert-butylphenol	Mineral dust, inert (dust, minerals): total dust	10 mg/m3	Not Available	Not Available	Not Available
Iceland Occupational Exposure Limits	2,6-di-tert-butylphenol	Dust: very fine dust	5 mg/m3	Not Available	Not Available	If both organic and inorganic dust are present, the organic part of the dust must not exceed 3 mg/m³.
Iceland Occupational Exposure Limits	2,6-di-tert-butylphenol	Dust, minerals, inert: very fine dust	5 mg/m3	Not Available	Not Available	Not Available
Iceland Occupational Exposure Limits	2,6-di-tert-butylphenol	Dust, minerals, inert: total dust	10 mg/m3	Not Available	Not Available	Not Available
Iceland Occupational Exposure Limits	2,6-di-tert-butylphenol	Mineral dust, inert (dust, minerals): very fine dust	5 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

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Ingredient	TEEL-1	TEEL-2	TEEL-3
naphthalene	15 ppm	83 ppm	500 ppm
Tetraethylenepentamine linear, cyclic and branched	15 mg/m3	130 mg/m3	790 mg/m3

Ingredient	Original IDLH	Revised IDLH
Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**	Not Available	Not Available
solvent naphtha petroleum, heavy aromatic	Not Available	Not Available
naphthalene	250 ppm	Not Available
2,6-di-tert-butylphenol	Not Available	Not Available
Tetraethylenepentamine linear, cyclic and branched	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
Tetraethylenepentamine linear, cyclic and branched	E	≤ 0.1 ppm
Notes:	***Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.***	

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.
for naphthalene:
Odour Threshold Value: 0.038 ppm
The TLV-TWA is thought to be low enough to prevent ocular toxicity but the margin of safety associated with the TLV for hypersusceptible individuals (with glucose-6-phosphate dehydrogenase defective erythrocytes) to naphthalene-induced blood dyscrasias is unknown. Individual sensitivity to inhaled naphthalene-induced haemotoxicity varies greatly with even small doses producing acute haemolysis in some.
Odour Safety Factor(OSF)
OSF=1.2E2 (NAPHTHALENE)

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.
8.2.2. Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable.
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber

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	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
DieselPower Enhancer

Material	CPI
BUTYL	C
NATURAL RUBBER	C
NEOPRENE	C
TEFLON	C
VITON	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Brown

Physical state	Liquid	**Relative density (Water = 1)**	0.90
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	>200
pH (as supplied)	Not Applicable	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	25
Initial boiling point and boiling range (°C)	165-225	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>62	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Combustible.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	7	**Surface Tension (dyn/cm or mN/m)**	Not Available

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Lower Explosive Limit (%)	0.6	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

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

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation of naphthalene vapour has been associated with headache, loss of appetite and nausea. Other conditions associated with exposure to the vapour include optic neuritis, corneal injury and kidney damage. Animals exposed to aerosols of a refined commercial solvent mixture consisting primarily of mono-methylated naphthalenes, exhibited dyspnoea. When animals were exposed to this mixture for 27 daily one-hour exposures over a 35-day period, they showed dyspnoea, listlessness, prostration and marked salivation. Weight loss was evident in mice but not in other species. Pathological changes occurred in the lungs, liver and skin. Pulmonary changes consisted mainly of oedema, bronchopneumonia, emphysema, and thickening of the parabronchiolar alveolar septa.
Ingestion	Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis). The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern. Ingestion of naphthalene and its congeners may produce abdominal cramps with nausea, vomiting, diarrhoea, headache, profuse perspiration, listlessness, confusion, and in severe poisonings, coma with or without convulsions. Irritation of the urinary bladder may also occur (presumably due to the excretory products of naphthalene metabolism) and produce urgency, dysuria, and the passage of brown or black urine with or without albumin or casts. These effects may disappear within a few days and have not been associated with haemolysis which is a prominent finding in naphthalene poisoning. Severe naphthalene poisoning in humans produces haemoglobinuria, methaemoglobinaemia, the production of Heinz bodies and death. Methaemoglobinemia produces a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.
Skin Contact	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may

Continued...

	progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Workers sensitised to naphthalene and its congeners show exfoliative dermatitis. Hypersensitivity, with positive patch tests, has been demonstrated in certain individuals. Percutaneous absorption is apparently inadequate to produce acute systemic reactions, except in new-born babies. Tests with a refined commercial liquid grade of methylnaphthalene (MN), placed under a patch for 48 hours on human skin produced slight to moderate reactions. In rabbits, a single dermal exposure to MN produced loss of appetite (anorexia). Repeated application of the refined commercial grade of MN to rabbit skin at 1-4 mg/kg/day for up to 21 days produced severe skin irritation and necrosis. Anorexia, moderate weight loss and fatalities were also recorded. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). Exposure to naphthalene and its congeners has produced cataracts in animals and workers. In one study, eight of twenty-one workers, exposed to naphthalene for 5-years, showed opacities of the lens.
Chronic	On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. In a two-year inhalation study, groups of mice were exposed at 0, 10 or 30 ppm naphthalene, 6 hours/day, 5 days/week for 103 weeks. Female mice showed an increase of pulmonary alveolar/bronchiolar adenomas at 30 ppm. There was no increase in the incidence of tumours in male mice. Naphthalene inhalation was associated with an increase in the incidence and severity of chronic inflammation, metaplasia of the olfactory epithelium, and hyperplasia of the respiratory epithelium in the nose, and chronic inflammation of the lungs of both sexes.

DieselPower Enhancer	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
solvent naphtha petroleum, heavy aromatic	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >3160 mg/kg[2]	Eye (rabbit): Irritating [PETROFIN]
	Oral (Rat) LD50: 3200 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
		Eye: no adverse effect observed (not irritating)[1]
		Skin: adverse effect observed (irritating)[1]
		Skin: no adverse effect observed (not irritating)[1]
naphthalene	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2500 mg/kg[2]	Eye (rabbit): 100 mg - mild
	Inhalation (Rat) LC50: >0.4 mg/l4h[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: 490 mg/kg[2]	Skin (rabbit):495 mg (open) - mild
		Skin: no adverse effect observed (not irritating)[1]
2,6-di-tert-butylphenol	**TOXICITY**	**IRRITATION**
	Intravenous (Mouse) LD50: 120 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin: adverse effect observed (irritating)[1]
Tetraethylenepentamine linear, cyclic and branched	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 660 mg/kg[2]	Eye (rabbit): 100 mg/24h moderate
	Oral (Rat) LD50: 3990 mg/kg[2]	Eye (rabbit): 5 mg moderate
		Skin (rabbit): 495 mg SEVERE
		Skin (rabbit): 5 mg/24h SEVERE

Legend:	***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances***

Continued...

solvent naphtha petroleum, heavy aromatic	Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length,with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent that iso- or cyclo-paraffins. The major classes of hydrocarbons have been shown to be well absorbed by the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with dietary lipids. The dependence of hydrocarbon absorption on concomitant triglyceride digestion and absorption,is known as the "hydrocarbon continuum hypothesis", and asserts that a series of solubilising phases in the intestinal lumen, created by dietary triglycerides and their digestion products, afford hydrocarbons a route to the lipid phase of the intestinal absorptive cell (enterocyte) membrane. While some hydrocarbons may traverse the mucosal epithelium unmetabolised and appear as solutes in lipoprotein particles in intestinal lymph, there is evidence that most hydrocarbons partially separate from nutrient lipids and undergo metabolic transformation in the enterocyte. The enterocyte may play a major role in determining the proportion of an absorbed hydrocarbon that, by escaping initial biotransformation, becomes available for deposition in its unchanged form in peripheral tissues such as adipose tissue, or in the liver. For petroleum: This product contains benzene, which can cause acute myeloid leukaemia, and n-hexane, which can be metabolized to compounds which are toxic to the nervous system. This product contains toluene, and animal studies suggest high concentrations of toluene lead to hearing loss. This product contains ethyl benzene and naphthalene, from which animal testing shows evidence of tumour formation. Cancer-causing potential: Animal testing shows inhaling petroleum causes tumours of the liver and kidney; these are however not considered to be relevant in humans. Mutation-causing potential: Most studies involving gasoline have returned negative results regarding the potential to cause mutations, including all recent studies in living human subjects (such as in petrol service station attendants). Reproductive toxicity: Animal studies show that high concentrations of toluene (>0.1%) can cause developmental effects such as lower birth weight and developmental toxicity to the nervous system of the foetus. Other studies show no adverse effects on the foetus. Human effects: Prolonged or repeated contact may cause defatting of the skin which can lead to skin inflammation and may make the skin more susceptible to irritation and penetration by other materials. Animal testing shows that exposure to gasoline over a lifetime can cause kidney cancer, but the relevance in humans is questionable.
NAPHTHALENE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
2,6-di-tert-butylphenol	For hindered phenols: Available data shows that acute toxicity of these substances is low. **Mutagenicity.** Data from bacterial reverse mutation assays and ***in vitro*** and ***in vivo*** chromosome aberration studies were reviewed. All assays, with and without metabolic activation, were negative. The weight of evidence for mutagenic potential for this category indicates these substances are not mutagenic. **In Vitro Chromosome Aberration Studies.** In vitro chromosome aberration studies are available for several members All except 2,6-di-tert-butyl-p-cresol were negative **In Vivo Chromosome Aberration Studies.** In vivo studies evaluating chromosome damage are available for six of the hindered phenols. All in vivo evaluations were negative. **Repeated Dose Toxicity.** ***for alkylphenolics category:*** ***The alkylphenolics may be divided into three groups.*** ***Group I: ortho-substituted mono-alkylphenols:*** ***Group II para-substituted mono-alkylphenols*** ***Group III: di- and tri-substituted mixed alkyl phenols*** ***The subdivision of the category alkylphenols into ortho, para and the di/tri-substituted mixed members is supported by several published investigations. In assessing antimicrobial and antifouling activity of twenty-three alkylphenols, a significant difference was noted between para and ortho-substituted materials. In particular, biological activity was found to vary parabolically with increasing hydrophobicity of the para-substituent while introduction of a bulky substituent at the ortho-position resulted in a very significant decrease in antimicrobial, antifouling, and membrane-perturbation potency. Several alkylphenolic analogs of butylated hydroxytoluene (BHT) were examined for hepatotoxicity in mice depleted of hepatic glutathione. The structural requirement of both hepatic and pulmonary toxicity was a phenol ring having benzylic hydrogen atoms at the para position and an ortho-alkyl group(s) that moderately hinders the phenolic hydroxyl group. It is noteworthy that in this model, neither of the Group III members TTBP (2,4,6-tri-tert-butylphenol) nor 2,6-DTBP (2,6-di-tert-butylphenol) showed either hepatic or pulmonary toxicity. Lastly, important differences were observed in gene activation (recombinant yeast cell assay – Lac-Z reporter gene) between ortho-substituted and para-substituted alkylphenol*** ***Acute toxicity: The acute (single-dose) toxicity of alkylphenols examined to date shows consistency, with LD50 values ranging from approximately 1000 mg/kg to over 2000 mg/kg.***
Tetraethylenepentamine linear, cyclic and branched	Handling ethyleneamine products is complicated by their tendency to react with other chemicals, such as carbon dioxide in the air, which results in the formation of solid carbamates. Because of their ability to produce chemical burns, skin rashes, and asthma-like symptoms, ethyleneamines also require substantial care in handling. Higher molecular weight ethyleneamines are often handled at elevated temperatures further increasing the possibility of vapor exposure to these compounds. Because of the fragility of eye tissue, almost any eye contact with any ethyleneamine may cause irreparable damage, even blindness. A single, short exposure to ethyleneamines, may cause severe skin burns, while a single, prolonged exposure may result in the material being absorbed through the skin in harmful amounts. Exposures have caused allergic skin reactions in some individuals. Single dose oral toxicity of ethyleneamines is low. The oral LD50 for rats is in the range of 1000 to 4500 mg/kg for the ethyleneamines. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Continued...

	The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration. For alkyl polyamines: The alkyl polyamines cluster consists of organic compounds containing two terminal primary amine groups and at least one secondary amine group.Typically these substances are derivatives of ethylenediamine, propylenediamine or hexanediamine. The molecular weight range for the entire cluster is relatively narrow, ranging from 103 to 232 Acute toxicity of the alkyl polyamines cluster is low to moderate via oral exposure and a moderate to high via dermal exposure. Cluster members have been shown to be eye irritants, skin irritants, and skin sensitisers in experimental animals. Repeated exposure in rats via the oral route indicates a range of toxicity from low to high hazard. Most cluster members gave positive results in tests for potential genotoxicity. Limited carcinogenicity studies on several members of the cluster showed no evidence of carcinogenicity. Unlike aromatic amines, aliphatic amines are not expected to be potential carcinogens because they are not expected to undergo metabolic activation, nor would activated intermediates be stable enough to reach target macromolecules. Polyamines potentiate NMDA induced whole-cell currents in cultured striatal neurons Triethylenetetramine (TETA) is a severe irritant to skin and eyes and induces skin sensitisation. TETA is of moderate acute toxicity: LD50(oral, rat) > 2000 mg/kg bw, LD50(dermal, rabbit) = 550 - 805 mg/kg bw. Acute exposure to saturated vapour via inhalation was tolerated without impairment. Exposure to to aerosol leads to reversible irritations of the mucous membranes in the respiratory tract. Following repeated oral dosing via drinking water only in mice but not in rats at concentration of 3000 ppm there were signs of impairment. The NOAEL is 600 ppm [92 mg/kg bw (oral, 90 days)]. Lifelong dermal application to mice (1.2 mg/mouse) did not result in tumour formation. There are differing results of the genetic toxicity for TETA. The positive results of the in vitro tests may be the result of a direct genetic action as well as a result of an interference with essential metal ions. Due to this uncertainty of the in vitro tests, the genetic toxicity of TETA has to be assessed on the basis of in vivo tests. The in vivo micronucleus tests (i.p. and oral) and the SLRL test showed negative results. There are no human data on reproductive toxicity (fertility assessment). Tetraethylenepentamine (TEPA) has a low acute toxicity when administered orally to rats (LD50 =3250 mg/kg). In an acute inhalation toxicity study with saturated vapor and whole body exposure, the LC50 was calculated to be >9.9 ppm (highest dose tested). TEPA is corrosive to the skin and eyes of rabbits. TEPA is a skin sensitiser in the guinea pig. Dermal acute toxicity LD50 values in the rabbit range from 660 - 1260 mg/kg. The higher toxicity via the dermal route is most likely due to the corrosive nature of TEPA to the skin whereas TEPA would be neutralized by stomach acid. The results of a 28-day repeated dose dermal toxicity study of TEPA indicated a systemic toxicity NOEL of 200 mg/kg/day and a dermal toxicity NOEL (local) of 50 mg/kg/day. The dermal LOAEL was 100 mg/kg/day.
2,6-di-tert-butylphenol & Tetraethylenepentamine linear, cyclic and branched	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✗	**STOT - Single Exposure**	✓
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✓

Legend: ✗ ***– Data either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

Continued...

SECTION 12 Ecological information

12.1. Toxicity

DieselPower Enhancer

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

solvent naphtha petroleum, heavy aromatic

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	<1mg/l	1
EC50	48h	Crustacea	0.95mg/l	1
EC50(ECx)	48h	Crustacea	0.95mg/l	1
LC50	96h	Fish	0.58mg/l	2
EC50	96h	Algae or other aquatic plants	11.7mg/l	2

naphthalene

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1344h	Fish	23-146	7
EC50	72h	Algae or other aquatic plants	ca.0.4mg/L	1
EC50	48h	Crustacea	1.09-3.4mg/l	4
LC50	96h	Fish	0.213mg/L	4
EC50(ECx)	0.05h	Crustacea	<0.001mg/L	4

2,6-di-tert-butylphenol

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	0.51mg/l	2
EC50	48h	Crustacea	0.45mg/l	1
NOEC(ECx)	504h	Crustacea	0.035mg/l	2
LC50	96h	Fish	>0.1mg/l	2
EC50	96h	Algae or other aquatic plants	0.56mg/l	2

Tetraethylenepentamine linear, cyclic and branched

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	2.1mg/l	1
EC50	48h	Crustacea	24.1mg/l	1
NOEC(ECx)	72h	Algae or other aquatic plants	0.5mg/l	1

Legend: ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data***

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
for naphthalene:
Environmental fate:
Naphthalene released to the atmosphere may be transported to surface water and/or soil by wet or dry deposition. Since most airborne naphthalene is in the vapor phase, deposition is expected to be very slow (about 0.04–0.06 cm/sec). It has been estimated that about 2–3% of naphthalene emitted to air is transported to other environmental media, mostly by dry deposition .
Naphthalene in surface water may volatilise to the atmosphere. The rate of volatilization also depends upon several environmental conditions, including temperature, wind velocity, and mixing rates of the air and water columns.
Log octanol/water partition coefficients (Kow) for naphthalene range from 3.29 to 3.37 and log organic carbon coefficients (Koc) range from 2.97 to 3.27. The reported experimentally determined log Koc is 3.11.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
naphthalene	HIGH (Half-life = 258 days)	LOW (Half-life = 1.23 days)
2,6-di-tert-butylphenol	HIGH	HIGH
Tetraethylenepentamine linear, cyclic and branched	LOW	LOW

Continued...

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
solvent naphtha petroleum, heavy aromatic	LOW (BCF = 159)
naphthalene	HIGH (BCF = 18000)
2,6-di-tert-butylphenol	HIGH (LogKOW = 4.92)
Tetraethylenepentamine linear, cyclic and branched	LOW (LogKOW = -3.1604)

12.4. Mobility in soil

Ingredient	Mobility
naphthalene	LOW (Log KOC = 1837)
2,6-di-tert-butylphenol	LOW (Log KOC = 14220)
Tetraethylenepentamine linear, cyclic and branched	LOW (Log KOC = 1098)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✗	✗	✗
vPvB	✗	✗	✗

PBT Criteria fulfilled?	No
vPvB	No

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Management Authority for disposal. ▸ Bury residue in an authorised landfill. ▸ Recycle containers if possible, or dispose of in an authorised landfill.
Waste treatment options	Not Available
Sewage disposal options	Not Available

Continued...

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	

Land transport (ADR-RID)

14.1. **UN number or ID number**	3082
14.2. **UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains solvent naphtha petroleum, heavy aromatic and naphthalene)
14.3. **Transport hazard class(es)**	Class: 9 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	III
14.5. **Environmental hazard**	Environmentally hazardous
14.6. **Special precautions for user**	Hazard identification (Kemler): 90 Classification code: M6 Hazard Label: 9 Special provisions: 274 335 375 601 Limited quantity: 5 L Tunnel Restriction Code: Not Applicable

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3082
14.2. **UN proper shipping name**	Environmentally hazardous substance, liquid, n.o.s. (contains solvent naphtha petroleum, heavy aromatic and naphthalene)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 9 ICAO / IATA Subsidiary Hazard: Not Applicable ERG Code: 9L
14.4. **Packing group**	III
14.5. **Environmental hazard**	Environmentally hazardous
14.6. **Special precautions for user**	Special provisions: A97 A158 A197 A215 Cargo Only Packing Instructions: 964 Cargo Only Maximum Qty / Pack: 450 L Passenger and Cargo Packing Instructions: 964 Passenger and Cargo Maximum Qty / Pack: 450 L Passenger and Cargo Limited Quantity Packing Instructions: Y964 Passenger and Cargo Limited Maximum Qty / Pack: 30 kg G

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3082
14.2. **UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains solvent naphtha petroleum, heavy aromatic and naphthalene)
14.3. **Transport hazard class(es)**	IMDG Class: 9 IMDG Subsidiary Hazard: Not Applicable

Continued...

14.4. **Packing group**	III
14.5 **Environmental hazard**	Marine Pollutant
14.6. **Special precautions for user**	EMS Number: F-A , S-F Special provisions: 274 335 969 Limited Quantities: 5 L

Inland waterways transport (ADN)

14.1. **UN number**	3082
14.2. **UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains solvent naphtha petroleum, heavy aromatic and naphthalene)
14.3. **Transport hazard class(es)**	9 | Not Applicable
14.4. **Packing group**	III
14.5. **Environmental hazard**	Environmentally hazardous
14.6. **Special precautions for user**	Classification code: M6 Special provisions: 274; 335; 375; 601 Limited quantity: 5 L Equipment required: PP Fire cones number: 0

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**	Not Available
solvent naphtha petroleum, heavy aromatic	Not Available
naphthalene	Not Available
2,6-di-tert-butylphenol	Not Available
Tetraethylenepentamine linear, cyclic and branched	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha))**	Not Available
solvent naphtha petroleum, heavy aromatic	Not Available
naphthalene	Not Available
2,6-di-tert-butylphenol	Not Available
Tetraethylenepentamine linear, cyclic and branched	Not Available

SECTION 15 Regulatory information

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

Hydrocarbons, C10, aromatics, <1% naphtalene (Solvent Naphtha)) is found on the following regulatory lists**

Not Applicable

solvent naphtha petroleum, heavy aromatic is found on the following regulatory lists

Continued...

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

naphthalene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
Iceland Occupational Exposure Limits
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

2,6-di-tert-butylphenol is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
Iceland Occupational Exposure Limits
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Tetraethylenepentamine linear, cyclic and branched is found on the following regulatory lists

Europe EC Inventory
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (solvent naphtha petroleum, heavy aromatic; naphthalene; 2,6-di-tert-butylphenol; Tetraethylenepentamine linear, cyclic and branched)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

Continued...

SECTION 16 Other information

Revision Date	16/02/2024
Initial Date	21/08/2018

CONTACT POINT

- For quotations contact your local Customer Services - http://wssdirectory.wilhelmsen.com/#/customerservices - - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Compliance Manager, - Email: Email: wss.global.sdsinfo@wilhelmsen.com - Telephone: Tel.: +47 67584000

Full text Risk and Hazard codes

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SDS Version Summary

Version	Date of Update	Sections Updated
5.37	16/02/2024	Toxicological information - Chronic Health, Hazards identification - Classification, Composition / information on ingredients - Ingredients, Identification of the substance / mixture and of the company / undertaking - Synonyms, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances

Continued...

- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Aspiration Hazard Category 1, H304	Calculation method
Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H336	Expert judgement
Carcinogenicity Category 2, H351	Calculation method
Hazardous to the Aquatic Environment Long-Term Hazard Category 2, H411	Expert judgement
, EUH066	On basis of test data
, EUH208	Calculation method

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end of SDS