SAFETY DATA SHEET

DK Premium Power performance

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

1.1 Product identifier

Product name	:	DK Premium Power performance
Product code	:	VG-001396
Internal code	:	VG-001396
Date of issue/ Date of revision	:	11/24/2023
Date of previous issue	:	11/22/2023
Version	:	1.01
Product description	:	Mixture
Physical state	:	Liquid.
Chemical identity	:	Not available.

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

Identified uses

Industrial applications: Fuel additive.

1.3 Details of the supplier of the safety data sheet

UK Supplier	:	Innospec Limited Innospec Manufacturing Park Oil Sites Road, Ellesmere Port Cheshire CH65 4EY United Kingdom
Telephone no.:	:	+44 (0)151 355 3611
Fax no.	:	+44 (0)151 356 2349
e-mail address of person responsible for this SDS	:	sdsinfo@innospecinc.com
EU Supplier	:	Innospec Limited Boite Postale 19, F-55300 St. Mihiel Han-sur-Meuse, Meuse, France + 33 3 2991 7300

1.4 Emergency telephone number

In Europe, Middle East, Africa, Asia Pacific and South America 24 hour / 7 day emergency response for our products is provided by the NCEC CARECHEM 24 global network

The main regional centres are listed here in Section 1. Other local contact numbers for specific language support in Asia Pacific are listed in Section 16.

Country information		Emergency telephone number	Location
Europe (all countries, all languages)	:	+44 (0) 1235 239 670	London, UK

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

Middle East, Africa (Arabic, French, English , Portuguese, Farsi)	: +44 (0) 1235 239 671	London, UK
Asia Pacific (all countries except China)	: +65 3158 1074	Singapore
China	: 400 120 6011	Beijing China
Brazil	: +55 11 3197 5891	Brazil
Mexico	: +52 555 004 8763	Mexico

In USA, Canada and North America, 24 h/7 days of emergency response for our product is provided by the CHEMTREC(R) Emergency Call Center based in the USA.

Country information	: **Emergency telephone number**
USA	: 800 424 9300
Canada, Puerto Rico, Virgin Islands	: +1 800 424 9300
In case of difficulty using the toll-free number, or for ships at sea, call	: +1 703 527 3887

See section 16.

Indicates information that has changed from previously issued version.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

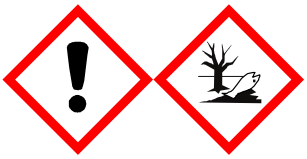
Acute Tox. 4, H302
Acute Tox. 4, H312
Acute Tox. 4, H332
Aquatic Chronic 2, H411

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

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

2.2 Label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.
H411 - Toxic to aquatic life with long lasting effects.

Supplemental label elements : Risk of explosion if heated under confinement.
Contains maleic anhydride. May produce an allergic reaction.

Precautionary statements

General : Not applicable.

Prevention : P280 - Wear protective gloves and protective clothing.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapour.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

Response : P391 - Collect spillage.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P302 + P312 - IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell.

Storage : Not applicable.

SECTION 2: Hazards identification

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : 2-ethylhexyl nitrate

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
2-ethylhexyl nitrate	REACH #: 01-2119539586-27 EC: 248-363-6 CAS: 27247-96-7	≥75 - ≤90	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 2, H411 EUH044 EUH066	ATE [Oral] = 500 mg/kg ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l EUH044: C ≥ 15%	[1] [2]
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	REACH #: 01-2119463588-24 EC: 919-284-0	≤3	STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	-	[1] [2]
naphthalene	EC: 202-049-5 CAS: 91-20-3 Index: 601-052-00-2	<1	Acute Tox. 4, H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 490 mg/kg M [Acute] = 1 M [Chronic] = 1	[1] [2]
maleic anhydride	REACH #: 01-2119472428-31 EC: 203-571-6 CAS: 108-31-6 Index: 607-096-00-9	<0.001	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (respiratory system) (inhalation) EUH071 **See Section 16 for the full text of the H statements declared above.**	ATE [Oral] = 400 mg/kg Skin Sens. 1, H317: C ≥ 0.001%	[1]

Additional CAS # used in National Inventories

SECTION 3: Composition/information on ingredients

2-ethylhexyl nitrate	-	27247-96-7
Solvent naphtha (petroleum), heavy arom.	-	64742-94-5
naphthalene	-	91-20-3

Additional information

Contains >15% 2-ethylhexyl nitrate [CAS 27247-96-7] It is recommended that fuel additive packages containing 15% or greater CI-0801 (2-ethylhexyl nitrate) follow the same precautionary measures/advice for handling and storage as pure CI-0801 (See section 3 for concentration). Please consult Innospec CNI Information Manual, Issue 4, May 2022 for product safety and handling information.

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, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
Our REACH (pre-) registrations DO NOT cover the following:
1. The manufacture of these products by our company outside the EU unless covered by the Only Representative provisions, and
2. The importation of these products into Europe by other companies. Re-importation by other companies is not covered by our (pre-) registrations
Customers and other third parties importing and/or re-importing our products into Europe will need either:
- Their own (pre-) registration for substances contained in the imported product, or constituent monomers (imported above 1 tonne per year and >2% by weight) in the case of imported polymers, or
- In the case of importation only, to make use of the "Only Representative" provisions, if available.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Remove dentures if any. Wash out mouth with water. Stop if the exposed person feels sick as vomiting may be dangerous. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

SECTION 4: First aid measures

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled.

Skin contact : Harmful in contact with skin.

Ingestion : Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Risk of explosion if heated under confinement. In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Decomposes violently when heated above 100°C.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

5.3 Advice for firefighters

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. First move people out of line-of-sight of the scene and away from windows. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fight fire from protected location or maximum possible distance. Do not fight fire when it reaches the material. Withdraw from fire and let it burn. Cool containing vessels with flooding quantities of water until well after fire is out.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. Fire-fighters' protective clothing will only provide limited protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through 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".

6.2 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. Collect spillage.

6.3 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

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

7.1 Precautions for safe handling

Remarks : Consult: Innospec CNI Information Manual, Issue 4, May 2022 Keep away from heat.

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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Keep away from heat. 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.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Storage : Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep away from heat. 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.

: Storage Temperature: Ambient.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

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

8.1 Control parameters

Occupational exposure limits

2-ethylhexyl nitrate	**Innospec Inc. (Europe, 1/2013). Absorbed through skin.** TWA: 1 ppm 8 hours. STEL: 1 ppm 15 minutes.
Solvent naphtha (petroleum), heavy arom.	**Supplier/Manufacturer (Europe, 2015).** EU HSPA (RCP Aromatic solvents 180 - 215): 151 mg/m³ 8 hours.
Solvent naphtha (petroleum), heavy arom.	**Supplier/Manufacturer (Europe, 2015).** EU HSPA (RCP Aromatic solvents 180 - 215): 151 mg/m³ 8 hours.
naphthalene	**EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values** TWA: 10 ppm 8 hours. TWA: 50 mg/m³, 0 times per shift, 8 hours.
Reaction mass of ethylbenzene and xylene	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [xylene, o-,m-, p- or mixed isomers] Absorbed through skin.** STEL: 441 mg/m³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 220 mg/m³ 8 hours. STEL: 100 ppm 15 minutes.
1,2,4-trimethylbenzene	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [trimethylbenzenes, all isomers or mixtures]** TWA: 25 ppm 8 hours. TWA: 125 mg/m³ 8 hours.
mesitylene	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [trimethylbenzenes, all isomers or mixtures]** TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 125 mg/m³, 0 times per shift, 8 hours.
xylene	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [xylene, o-,m-, p- or mixed isomers] Absorbed through skin.** STEL: 441 mg/m³, 0 times per shift, 15 minutes. TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 220 mg/m³, 0 times per shift, 8 hours. STEL: 100 ppm, 0 times per shift, 15 minutes.
decamethylcyclopentasiloxane	**Innospec Inc. (Europe, 2017).** TWA: 10 ppm, 0 times per shift, 8 hours.
cumene	**EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin.** STEL: 250 mg/m³, 0 times per shift, 15 minutes. STEL: 50 ppm, 0 times per shift, 15 minutes. TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 125 mg/m³, 0 times per shift, 8 hours.
Formaldehyde, solution	**EH40/2005 WELs (United Kingdom (UK), 1/2020).**

SECTION 8: Exposure controls/personal protection

	STEL: 2.5 mg/m³, 0 times per shift, 15 minutes. STEL: 2 ppm, 0 times per shift, 15 minutes. TWA: 2 ppm, 0 times per shift, 8 hours. TWA: 2.5 mg/m³, 0 times per shift, 8 hours.
maleic anhydride	**EH40/2005 WELs (United Kingdom (UK), 1/2020). Inhalation sensitiser.** STEL: 3 mg/m³ 15 minutes. TWA: 1 mg/m³ 8 hours.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
2-ethylhexyl nitrate	DNEL	Long term Dermal	1 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.35 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	0.044 mg/cm²	Workers	Local
	DNEL	Long term Dermal	0.52 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Inhalation	0.087 mg/m³	General population [Consumers]	Systemic
	DNEL	Long term Oral	0.025 mg/kg bw/day	General population [Consumers]	Systemic
	DNEL	Long term Dermal	0.022 mg/cm²	General population [Consumers]	Local
	DNEL	Long term Oral	25 µg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	87 µg/m³	General population	Systemic
	DNEL	Long term Inhalation	0.35 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	0.52 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1 mg/kg bw/day	Workers	Systemic
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	DNEL	Long term Dermal	12.5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	151 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	7.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	32 mg/m³	General population	Systemic
	DNEL	Long term Oral	7.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0.03 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.28 mg/	General	Systemic

SECTION 8: Exposure controls/personal protection

			kg bw/day	population	
	DNEL	Long term Inhalation	0.69 mg/m³	General population	Local
	DNEL	Long term Inhalation	0.69 mg/m³	General population	Systemic
	DNEL	Long term Dermal	0.95 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.31 mg/m³	Workers	Local
	DNEL	Long term Inhalation	2.31 mg/m³	Workers	Systemic
	DNEL	Short term Oral	25.6 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	143.5 mg/m³	General population	Local
	DNEL	Short term Inhalation	160.23 mg/m³	Workers	Local
	DNEL	Short term Inhalation	226 mg/m³	General population	Systemic
	DNEL	Short term Inhalation	384 mg/m³	Workers	Systemic
naphthalene	DNEL	Long term Dermal	3.57 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	25 mg/m³	Workers	Systemic
	DNEL	Long term Inhalation	25 mg/m³	Workers	Local
	DNEL	Long term Dermal	3.57 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	25 mg/m³	Workers	Local
	DNEL	Long term Inhalation	25 mg/m³	Workers	Systemic
maleic anhydride	DNEL	Long term Inhalation	0.05 mg/m³	General population	Systemic
	DNEL	Long term Oral	0.06 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.08 mg/m³	General population	Local
	DNEL	Short term Oral	0.1 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	0.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.1 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.19 mg/m³	Workers	Systemic
	DNEL	Short term Dermal	0.2 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0.2 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.32 mg/m³	Workers	Local
	DNEL	Short term Inhalation	0.8 mg/m³	Workers	Local
	DNEL	Short term Inhalation	0.8 mg/m³	Workers	Systemic

PNECs

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
2-ethylhexyl nitrate	PNEC	Fresh water	0.8 µg/l	Assessment Factors
	PNEC	Marine	0.08 µg/l	Assessment Factors
	PNEC	Sediment	0.00074 mg/kg dwt	Equilibrium Partitioning
	PNEC	Soil	0.000191 mg/kg dwt	Equilibrium Partitioning
naphthalene	PNEC	Fresh water	2.4 µg/l	-
	PNEC	Marine	0.24 µg/l	-
	PNEC	Sewage Treatment Plant	2.9 mg/l	-
	PNEC	Fresh water sediment	67.2 µg/kg dwt	-
	PNEC	Marine water sediment	67.2 µg/kg dwt	-
	PNEC	Soil	53.3 µg/kg dwt	-

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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 : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Liquid. [Clear. Liquid.]
Colour	:	Amber.
Odour	:	Not available.
Odour threshold	:	Not available.
pH	:	Not available.
Melting point/freezing point	:	Not available.
Initial boiling point and boiling range	:	Lowest known value: 178 to 215°C (352.4 to 419°F)(Solvent naphtha (petroleum), heavy arom.).
Flash point	:	Closed cup: 76°C (168.8°F) [DIN EN ISO 2719]
Evaporation rate	:	Highest known value: <1 (2-ethylhexyl nitrate) Weighted average: 0.88compared with butyl acetate
Flammability (solid, gas)	:	Not available.
Burning time	:	Not applicable.
Burning rate	:	Not applicable.
Upper/lower flammability or explosive limits	:	Greatest known range: Lower: 0.6% Upper: 7% (Solvent naphtha (petroleum), heavy arom.)
Vapour pressure	:	Highest known value: 0.1 kPa (0.8 mm Hg) (at 20°C) (Solvent naphtha (petroleum), heavy arom.). Weighted average: 0.03 kPa (0.23 mm Hg) (at 20°C)
Vapour density	:	Highest known value: 4.6 to 5.5 (Air = 1) (Solvent naphtha (petroleum), heavy arom.). Weighted average: 1.21 (Air = 1)
Relative density	:	Not available.
Density	:	0.97 g/cm³ [15°C (59°F)] [ASTM D 4052]
Solubility(ies)	:	
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Lowest known value: 215°C (419°F) (2-ethylhexyl nitrate).
Decomposition temperature	:	Not available.
Viscosity	:	Kinematic (40°C (104°F)): 1.9 mm^2/s (1.9 cSt)
Explosive properties	:	Slightly explosive in the presence of the following materials or conditions: heat.
Oxidising properties	:	Not available.

Particle characteristics

Median particle size	:	Not applicable.

9.2 Other information

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Decomposes violently when heated above 100°C. This mixture contains materials which are unstable under the following conditions: heat

10.3 Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
heating under confinement
Reactions may include the following:
risk of explosion

10.4 Conditions to avoid : No specific data.

SECTION 10: Stability and reactivity

10.5 Incompatible materials : Reactive or incompatible with the following materials:
alkalis
oxidising materials
copper
reducing agents
brass

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Test	Species	Result type	Dose
2-ethylhexyl nitrate	-	Rat	LCLo Inhalation Vapour	>4.6 mg/l
	-	Rabbit	LD50 Dermal	>4820 mg/kg
	-	Rat	LD50 Oral	>9640 mg/kg
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	Rat	LC50 Inhalation Vapour	>590 mg/m³
	-	Rabbit	LD50 Dermal	>2 mL/kg
	-	Rabbit	LD50 Dermal	>2000 mg/kg
	-	Rat	LDLo Oral	5 mL/kg
naphthalene	-	Rat	LC50 Inhalation Vapour	>340 mg/m³
	-	Rabbit	LD50 Dermal	>2000 mg/kg
	-	Rat	LD50 Oral	490 mg/kg
maleic anhydride	-	Rabbit	LD50 Dermal	2620 mg/kg
	-	Rat	LD50 Oral	400 mg/kg

Acute toxicity estimates (ATE)

Route	ATE value
Oral	558.66 mg/kg
Dermal	1229.05 mg/kg
Inhalation (vapours)	12.29 mg/l

Irritation/Corrosion

Product/ingredient name	Test	Species	Result	
2-ethylhexyl nitrate	OECD 437 Bovine Corneal Opacity and Permeability Test	Mammal - species unspecified	Eyes - Mild irritant	-
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Mild irritant	-
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	Mammal - species unspecified	Eyes - Mild irritant	-
	-	Rabbit	Skin - Mild irritant	-
maleic anhydride	-	Rabbit	Eyes - Severe irritant	-

Sensitisation

SECTION 11: Toxicological information

Product/ingredient name	Test	Species	Result
2-ethylhexyl nitrate	OECD 406 Skin Sensitization	Guinea pig	Not sensitizing -

Mutagenicity

Product/ingredient name	Test	Experiment	Result
2-ethylhexyl nitrate	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Human	Negative OECD 473 In vitro Mammalian Chromosomal Aberration Test

Reproductive toxicity

Product/ingredient name	Test	Species	Result	Dose
2-ethylhexyl nitrate	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	-	Oral: 20 mg/kg Parental toxicity.
	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female		Oral: 100 mg/kg F1

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Harmful if inhaled.

Skin contact : Harmful in contact with skin.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

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 : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

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.

11.2 Information on other hazards

SECTION 11: Toxicological information

11.2.1 Endocrine disrupting properties

No known significant effects or critical hazards.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	Species	Exposure	Result
2-ethylhexyl nitrate	OECD 201 Alga, Growth Inhibition Test	Algae	72 hours	Acute EC50 1 to 10 mg/l Estimated. Nominal Concentration
	OECD 202 Daphnia sp. Acute Immobilisation Test	Daphnia	48 hours	Acute EC50 >10 mg/l Estimated.
	OECD 203 Fish, Acute Toxicity Test	Fish - Danio rerio	96 hours	Acute LC50 2 mg/l
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	Algae	72 hours	Acute EC50 1 to 3 mg/l
	-	Daphnia	48 hours	Acute EC50 3 to 10 mg/l
	-	Fish	96 hours	Acute LC50 2 to 5 mg/l
naphthalene	-	Daphnia - Water flea - Daphnia magna	48 hours	Acute EC50 1.96 mg/l Fresh water
	-	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 hours	Acute LC50 2350 µg/l Marine water
	-	Fish - Oncorhynchus mykiss	96 hours	Acute LC50 1.6 mg/l
	-	Crustaceans - Fiddler crab - Uca pugnax - Adult	3 weeks	Chronic NOEC 0.5 mg/l Marine water
	-	Fish - Mozambique tilapia - Oreochromis mossambicus	60 days	Chronic NOEC 1.5 mg/l Fresh water
maleic anhydride	-	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours	Acute LC50 230 ppm Fresh water

12.2 Persistence and degradability

Product/ingredient name	Test	Result
2-ethylhexyl nitrate	OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)	0 % - Not readily - 28 days

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-ethylhexyl nitrate	Fresh water 10 to 15 days, pH 4, 25°C Fresh water 7 days, pH 7, 25°C Fresh water 4 to 6 days, pH 9, 25°C	-	Not readily
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	-	Inherent

SECTION 12: Ecological information

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2-ethylhexyl nitrate	5.24	1332	high
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	<100	low
naphthalene	3.4	36.5 to 168	low
maleic anhydride	-2.78	-	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Endocrine disrupting properties

No known significant effects or critical hazards.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

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

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or 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.

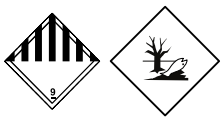
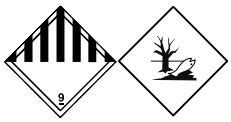
Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN3082	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ethylhexyl nitrate, Solvent naphtha (petroleum), heavy arom.)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ethylhexyl nitrate, Solvent naphtha (petroleum), heavy arom.)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-ethylhexyl nitrate, Solvent naphtha (petroleum), heavy arom.). Marine pollutant (2-ethylhexyl nitrate, Solvent naphtha (petroleum), heavy arom.)	Environmentally hazardous substance, liquid, n.o.s. (2-ethylhexyl nitrate, Solvent naphtha (petroleum), heavy arom.)
14.3 Transport hazard class(es)	9 	9 	9 	9 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes.
Additional information	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Hazard identification number** 90 **Limited quantity** 5 L **Special provisions** 274, 335, 601, 375 **Tunnel code** (-)	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Special provisions** 274, 335, 375, 601	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Emergency schedules** F-A, S-F **Special provisions** 274, 335, 969	
14.6 Special precautions for user				
14.7 Maritime transport in bulk according to IMO instruments				

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

SECTION 15: Regulatory information

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

Other EU regulations

VOC : The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

VOC for Ready-for-Use Mixture : Not available.

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2	200	500

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Persistent Organic Pollutants

Not listed.

National regulations

Chemical Weapons Convention List Schedule I Chemicals :Not listed

Chemical Weapons Convention List Schedule II Chemicals :Not listed

Chemical Weapons Convention List Schedule III Chemicals :Not listed

International lists

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

Canada inventory :At least one component is not listed.

China inventory (IECSC) :All components are listed or exempted.

EU REACH Status :Please contact your supplier for information on the REACH status of this material.

Japan inventory :At least one component is not listed.

Korea REACH Status :Please contact your supplier for information on the REACH status of this material.

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

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

Taiwan REACH Status :Please contact your supplier for information on the REACH status of this material.

SECTION 15: Regulatory information

Turkey REACH Status : Please contact your supplier for information on the REACH status of this material.

United States inventory (TSCA 8b) : All components are listed or exempted.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.

Not to be used for hydraulic fracking applications

SECTION 16: Other information

Abbreviations and acronyms :
ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

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

Classification	Justification
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H312	Calculation method
Acute Tox. 4, H332	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements :

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
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.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

SECTION 16: Other information

H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH044 Risk of explosion if heated under confinement.
EUH066 Repeated exposure may cause skin dryness or cracking.
EUH071 Corrosive to the respiratory tract.

Full text of classifications [CLP/GHS] :

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 1B	CARCINOGENICITY - Category 1B
Carc. 2	CARCINOGENICITY - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Resp. Sens. 1	RESPIRATORY SENSITISATION - Category 1
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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Emergency contact numbers for local language support in Asia Pacific region

Country information	Languages supported	Telephone no.:	Location
Australia	English	+61 2 8014 4558	Australia
Bangladesh	Bengali, English	+65 3158 1200	Singapore
China	Mandarin, English	400 120 6011	Beijing China
India	Hindi, English	+65 3158 1198	Singapore
India (local toll free number)	Hindi, English	000800 100 7479	India
Indonesia (local toll free number)	Bahasa Indonesian, English	00780 3011 0293	Indonesia
Japan	Japanese, English	+81 3 4578 9341	Japan
Korea	Korean, English	+65 3158 1285	Singapore
Malaysia	Bahasa Malaysian, English	+60 3 6207 4347	Malaysia
New Zealand	English	+64 9929 1483	New Zealand
Pakistan	Urdu, English	+65 3158 1329	Singapore

SECTION 16: Other information

Philippines	Tagalog, English	+63 2 8231 2149	Singapore
Sri Lanka	Sinhalese, English	+65 3158 1195	Singapore
Thailand (local toll free number)	Thai, English	001800 1 2066 6751	Thailand
Vietnam	Vietnamese, English	+65 3158 1255	Singapore

Notice to reader

The information in this Safety Data Sheet is based on the present state of knowledge and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.