ROYCO® 500

Version	Revision Date:	SDS Number:	Date of last issue: 08.12.2022
2.0	02.06.2023	203000016240	Country / Language: GB / 6N (EN)

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

1.1 Product identifier

Trade name : ROYCO® 500

Product code : 000000000058322814

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

Use of the Substance/Mixture : Lubricant

1.3 Details of the supplier of the safety data sheet

Company : LANXESS Limited
Tenax Road, Trafford Park
M17 1WT, Manchester
Great Britain

Responsible Department : +49 221 8885 2288
infosds@lanxess.com

1.4 Emergency telephone number

Emergency telephone number : For 24/7 multilingual emergency please call CHEMTREC EMEA: +44 20 3885 0382 and mention CCN 1001748.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P273 Avoid release to the environment.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling

EUH208 Contains N-1-naphthylaniline. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
N-1-naphthylaniline	90-30-2 201-983-0 UK-01-7308755652-5-0001	Acute Tox. 4; H302 Skin Sens. 1B; H317 STOT RE 2; H373 (Blood, Kidney) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 0.25 - < 1
tris(methylphenyl) phosphate	1330-78-5 215-548-8	Repr. 2; H361 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 0.25 - < 1
N,N'-diphenyl-p-phenylenediamine	74-31-7 200-806-4 612-132-00-1	Skin Sens. 1; H317 Muta. 2; H341 Repr. 2; H361 Aquatic Acute 1;	>= 0.0025 - < 0.025

		H400 Aquatic Chronic 3; H412 _____ M-Factor (Acute aquatic toxicity): 10	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Do not leave the victim unattended.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled : If any symptoms develop, remove to fresh air.
If unconscious, place in recovery position and get medical attention immediately.
Maintain open airway.
Loosen tight clothing such as a collar, tie, belt or waistband.
The exposed person may need to be kept under medical surveillance for 48 hours.
If not breathing, if breathing is irregulor or respiratory arrest occurs, provide artifical respiration, or oxygen by a trained professional, using a pocket type respirator.

In case of skin contact : Wash skin immediately with plenty of water and soap. Subsequent cleansing with polyethyleneglycol 400, then again with water and soap.
Continue to rinse for at least 20 minutes.
Wash contaminated clothing before reuse.
Get medical attention if symptoms occur.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Get medical attention if symptoms appear.

If swallowed : Rinse mouth with water.
Maintain open airway.
Do not induce vomiting unless directed to do by medical personnel.
If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
If unconscious, place in recovery position and get medical attention immediately.

Never give anything by mouth to an unconscious person.
Get medical attention if symptoms appear.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Get medical attention if symptoms appear.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

Hazardous combustion products : Carbon dioxide (CO2)
Carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.
No action shall be taken involving any personal risk or without suitable training.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : No action shall be taken involving any personal risk or without suitable training.
Put on appropriate personal protection equipment.
Do not touch or walk through spilt material.
Evacuate unnecessary personnel.
Keep unnecessary and unprotected personnel from entering.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.
Move containers from spill area.
Wash spillages into an effluent treatment plant or proceed as follows.
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Dispose of wastes in an approved waste disposal facility.
Do not allow into the sewerage system, surface waters or groundwater or into the soil.
Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Remove contaminated clothing and protective equipment before entering eating areas.
Workers should wash hands and face before eating, drinking and smoking.
Put on appropriate personal protection equipment.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Persons with a history of skin sensitization to this product should not be employed in any process in which this product is used.
Avoid exposure during pregnancy.

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.

Dust explosion class : No data available

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container closed when not in use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate container to avoid environmental contamination. Empty containers retain residue and can be dangerous. Do not reuse container.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Raw material for industry

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
N-1-naphthylaniline	Workers	Inhalation	Long-term exposure, Systemic effects	0.08 mg/m3
	Workers	Inhalation	Short-term exposure, Systemic effects	44 mg/m3
	Workers	Dermal	Long-term exposure, Systemic effects	0.02 mg/kg bw/day
	Workers	Dermal	Short-term exposure, Systemic effects	6.67 mg/kg bw/day
	Consumers	Inhalation	Long-term exposure, Systemic effects	0.015 mg/m3
	Consumers	Inhalation	Short-term exposure, Systemic effects	33 mg/m3
	Consumers	Dermal	Long-term exposure, Systemic effects	0.008 mg/kg bw/day
	Consumers	Dermal	Short-term exposure, Systemic effects	3.33 mg/kg bw/day
	Consumers	Oral	Long-term exposure, Systemic effects	0.008 mg/kg bw/day
	Consumers	Oral	Short-term exposure, Systemic effects	2 mg/kg bw/day
tris(methylphenyl) phosphate	Workers	Inhalation	Long-term systemic effects	0.18 mg/m3

	Workers	Dermal	Long-term systemic effects	0.41 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.03 mg/m3
	Consumers	Dermal	Long-term systemic effects	0.15 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0.02 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	0.18 mg/m3
	Workers	Dermal	Long-term systemic effects	0.41 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.03 mg/m3
	Consumers	Dermal	Long-term systemic effects	0.15 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0.02 mg/kg bw/day

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
N-1-naphthylaniline	Fresh water	0.0002 mg/l
	Marine water	0.00002 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0.0344 mg/kg dry weight (d.w.)
	Marine sediment	0.00344 mg/kg dry weight (d.w.)
	Soil	0.0068 mg/kg dry weight (d.w.)
	Secondary Poisoning	7.173 mg/kg food
tris(methylphenyl) phosphate	Fresh water	0.001 mg/l
	Freshwater - intermittent	0.00146 mg/l
	Marine water	0.0001 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	2.05 mg/kg dry weight (d.w.)
	Marine sediment	0.205 mg/kg dry weight (d.w.)
	Soil	1.01 mg/kg dry weight (d.w.)
	Secondary Poisoning	0.65 mg/kg food

8.2 Exposure controls

Engineering measures

If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal protective equipment

Eye/face protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Safety glasses with side-shields
Hand protection		
Material	:	Neoprene gloves
Directive	:	Protective gloves complying with EN 374.
Protective index	:	Class 6
Wearing time	:	< 60 min
Remarks	:	Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Before removing gloves clean them with soap and water. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Skin and body protection	:	Wear suitable protective clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Impervious clothing Chemical resistant apron
Respiratory protection	:	No personal respiratory protective equipment normally required. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. In the case of vapour formation use a respirator with an approved filter.
Filter type	:	ABEK-filter
Protective measures	:	Please follow all applicable local/national requirements when selecting protective measures for a specific workplace. These recommendations apply to the product as supplied.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Physical state	:	liquid
Colour	:	amber
Odour	:	mild

Odour Threshold	:	No data available
Pour point	:	-54 °C
Boiling point/boiling range	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	254 °C Method: open cup
Decomposition temperature	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	4.90 - 23.00 mm2/s (40 - 100 °C) Method: ASTM D 445
Solubility(ies)		
Water solubility	:	slightly soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	1
Density	:	No data available
Relative vapour density	:	No data available

9.2 Other information

Explosives	:	No data available
Oxidizing properties	:	No data available
Flammable solids		

Burning number	:	No data available
Self-ignition	:	No data available
Metal corrosion rate	:	No data available
Dust explosion class	:	No data available
Evaporation rate	:	No data available
Miscibility with water	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Conditions to avoid : Extremes of temperature and direct sunlight.
Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents
Strong acids and strong bases

10.6 Hazardous decomposition products

Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Eye contact
Skin contact
Skin Absorption

Acute toxicity

Not classified based on available information.

Components:

N-1-naphthylaniline:

Acute oral toxicity	:	LD50 (Rat, male): 1,625 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit, male): > 5,000 mg/kg

tris(methylphenyl) phosphate:

Acute oral toxicity	:	LD50 (Rat, male and female): > 20,000 mg/kg Method: Standard acute method GLP: no
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Standard acute method GLP: no Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Dosage caused no mortality
Acute dermal toxicity	:	LD50 (Rabbit, male and female): 3,700 mg/kg Method: Standard acute method GLP: no Assessment: Not classified due to data which are conclusive although insufficient for classification.

N,N'-diphenyl-p-phenylenediamine:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 423 GLP: yes Assessment: The substance or mixture has no acute oral toxicity Remarks: No mortality observed at this dose.

Skin corrosion/irritation

Not classified based on available information.

Components:

N-1-naphthylaniline:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
GLP	:	no

tris(methylphenyl) phosphate:

Species	:	Rabbit
Exposure time	:	24 h

Method	:	Draize Test
GLP	:	no
Remarks	:	Mild skin irritation (not subject to classification)

N,N'-diphenyl-p-phenylenediamine:

Species	:	human skin
Method	:	OECD Test Guideline 439
Result	:	No skin irritation
GLP	:	yes

Serious eye damage/eye irritation

Not classified based on available information.

Components:

N-1-naphthylaniline:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
GLP	:	no

tris(methylphenyl) phosphate:

Species	:	Rabbit
Exposure time	:	24 h
Result	:	No eye irritation
GLP	:	no

N,N'-diphenyl-p-phenylenediamine:

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation
GLP	:	yes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

N-1-naphthylaniline:

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406

Result	:	The product is a skin sensitiser, sub-category 1B.
GLP	:	no

tris(methylphenyl) phosphate:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Not a skin sensitizer.
GLP	:	yes
Remarks	:	Not classified due to inconclusive data.

N,N'-diphenyl-p-phenylenediamine:

Test Type	:	Local lymph node assay (LLNA)
Exposure routes	:	Skin contact
Species	:	Mouse
Result	:	May cause sensitisation by skin contact.

Germ cell mutagenicity

Not classified based on available information.

Components:

N-1-naphthylaniline:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: No information available. Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative GLP: No information available. Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: No information available.
Genotoxicity in vivo	:	Test Type: dominant lethal test Species: Mouse (male) Application Route: Intraperitoneal

Method: OECD Test Guideline 478
Result: negative
GLP: No information available.

tris(methylphenyl) phosphate:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: no

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
GLP: no

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (female)
Cell type: In red blood cells
Application Route: Oral
Result: negative
GLP: no

Test Type: sister chromatid exchange assay
Species: Chinese hamster (male and female)
Cell type: Bone marrow
Application Route: Oral
Result: negative
GLP: yes

N,N'-diphenyl-p-phenylenediamine:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with metabolic activation
Method: OECD Test Guideline 471
Result: positive
GLP: yes

Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: without metabolic activation

Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 490
Result: positive
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
GLP: yes

Germ cell mutagenicity- Assessment : In vitro tests showed mutagenic effects

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

Components:

N-1-naphthylaniline:

Effects on foetal development : Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 15 - 50 - 150 milligram per kilogram
General Toxicity Maternal: NOAEL: 50 mg/kg bw/day
Developmental Toxicity: NOAEL: 150 mg/kg bw/day
Method: OECD Test Guideline 414
GLP: yes

tris(methylphenyl) phosphate:

Effects on fertility : Species: Mouse, male and female
Application Route: Oral
Dose: 62,5 - 124 - 250 milligram per kilogram
General Toxicity - Parent: LOAEL: 62.5 mg/kg body weight
General Toxicity F1: LOAEL: 62.5 mg/kg body weight
Target Organs: Testes
GLP: no

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat, female
Application Route: Oral

Dose: 20 - 100 - 400 - 750 milligram per kilogram
Duration of Single Treatment: 28 d
General Toxicity Maternal: NOEL: 20 mg/kg body weight
Developmental Toxicity: LOAEL: 20 mg/kg body weight
Method: OPPTS 870.3700
GLP: yes

Reproductive toxicity - Assessment : Suspected of damaging fertility. (Causing atrophy of the testes), Suspected of damaging the unborn child.

Exposure routes, oral

N,N'-diphenyl-p-phenylenediamine:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Application Route: Oral
Duration of Single Treatment: 42 - 46 Days
General Toxicity - Parent: NOAEL: 50 mg/kg body weight
Fertility: NOAEL: 8 mg/kg body weight
Method: OECD Test Guideline 421
GLP: yes

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Application Route: Oral
Duration of Single Treatment: 42 - 46 Days
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Developmental Toxicity: NOAEL: 50 mg/kg body weight
Method: OECD Test Guideline 421
GLP: yes

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

N-1-naphthylaniline:

Exposure routes : Oral
Target Organs : Blood, Kidney
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity

Components:

N-1-naphthylaniline:

Species	:	Rat, male and female
LOAEL	:	5 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Number of exposures	:	daily
Dose	:	5 - 25 - 125 mg/kg bw/day
Method	:	OECD Test Guideline 408
GLP	:	yes
Target Organs	:	Blood, Kidney
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
Remarks	:	Subchronic toxicity

tris(methylphenyl) phosphate:

Species	:	Rat, male and female
LOAEL	:	50 mg/kg
Application Route	:	Oral
Exposure time	:	91 d
Number of exposures	:	5 days/week
Dose	:	50 - 100 - 200 - 400 - 800 mg/kg bw/day
GLP	:	yes
Remarks	:	Subchronic toxicity

N,N'-diphenyl-p-phenylenediamine:

Species	:	Rat, male and female
NOAEL	:	1,000 mg/kg
Application Route	:	Oral
Exposure time	:	28 Days
Number of exposures	:	daily

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Further information

Product:

Remarks	:	The product itself has not been tested.

SECTION 12: Ecological information

12.1 Toxicity

Components:

N-1-naphthylaniline:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.44 mg/l Exposure time: 96 h Analytical monitoring: no Remarks: nominal concentration
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.3 mg/l End point: Immobilization Exposure time: 48 h Analytical monitoring: no Remarks: nominal concentration
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.93 mg/l End point: Growth rate Exposure time: 96 h Analytical monitoring: no Remarks: nominal concentration
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 10,000 mg/l End point: Respiration inhibition Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.032 mg/l End point: Reproduction Exposure time: 21 d Species: Daphnia magna (Water flea) Analytical monitoring: no Method: OECD Test Guideline 211 GLP: yes Remarks: nominal concentration
M-Factor (Chronic aquatic toxicity)	:	1

tris(methylphenyl) phosphate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.6 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no

GLP: no
Remarks: Fresh water
nominal concentration

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.146 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 2.5 mg/l
End point: Growth rate
Exposure time: 72 h
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water
nominal concentration
water extractable fraction

NOEC (Pseudokirchneriella subcapitata (green algae)): > 2.5 mg/l
End point: Growth rate
Exposure time: 72 h
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water
nominal concentration
water extractable fraction

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
End point: Respiration inhibition
Exposure time: 3 h
Analytical monitoring: no
Method: OECD Test Guideline 209
GLP: yes
Remarks: Fresh water
nominal concentration

Toxicity to fish (Chronic toxicity) : NOEC: 0.01 mg/l
Exposure time: 28 d
Species: Jordanella floridae (flagfish)
Analytical monitoring: yes
GLP: no
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.1 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Analytical monitoring: yes GLP: no Remarks: Fresh water
M-Factor (Chronic aquatic toxicity)	:	1

N,N'-diphenyl-p-phenylenediamine:

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0.12 mg/l End point: Immobilization Exposure time: 48 h Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes Remarks: No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	EC10 (Pseudokirchneriella subcapitata (green algae)): 0.049 mg/l End point: Growth rate Exposure time: 72 h Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.099 mg/l End point: Growth rate Exposure time: 72 h Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to microorganisms	:	EC50 : > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity	:	Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

N-1-naphthylaniline:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 14 d
Method: OECD Test Guideline 301C

tris(methylphenyl) phosphate:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, adapted
Concentration: 30 mg/l
Result: Inherently biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
GLP: No information available.

N,N'-diphenyl-p-phenylenediamine:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0.2 %
Exposure time: 14 d
Method: OECD Test Guideline 301C
GLP: no

12.3 Bioaccumulative potential

Components:

N-1-naphthylaniline:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 56 d
Bioconcentration factor (BCF): >= 427
Method: OECD Test Guideline 305C

Partition coefficient: n-octanol/water : log Pow: 4.28

tris(methylphenyl) phosphate:

Partition coefficient: n-octanol/water : log Pow: 5.93 (25 °C)
GLP: no

N,N'-diphenyl-p-phenylenediamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 260 - 2,150

Partition coefficient: n-octanol/water	:	log Pow: 3.4 (23 °C) Method: OECD Test Guideline 117 GLP: yes

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life. Harmful to aquatic life with long lasting effects. The product itself has not been tested.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	The generation of waste should be avoided or minimised wherever possible. This material and its container must be disposed of in a safe way. Empty containers retain product residue; observe all precautions for product. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Wastedisposal should be in accordance with existing federal state, provincial and or local environmental controls
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Hazard and Handling Notes.	:	Not dangerous cargo. Keep separated from foodstuffs.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17)	:	Conditions of restriction for the following entries should be considered: Number on list 3 2-naphthylamine (Number on list 43, 28, 12) benzene (Number on list 72, 5, 29, 28)
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors.	:	Neither banned nor restricted
UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH)
Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

No information available.

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H317	:	May cause an allergic skin reaction.
H341	:	Suspected of causing genetic defects.
H361	:	Suspected of damaging fertility or the unborn child.
H373	:	May cause damage to organs through prolonged or repeated exposure if swallowed.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Muta.	:	Germ cell mutagenicity
Repr.	:	Reproductive toxicity
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office

of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Chronic 3	H412	Calculation method

The data contained in this Safety Data Sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered to be a guidance for processing and does not contain any warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. It is the responsibility of the recipient of the product to ensure that any proprietary rights and existing laws and legislation are observed.

Relevant changes from the previous version are marked on the left side of the Safety Data Sheet with a black double bar in appropriate places.