

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



ROYCO® 22MS G-81827

Version	Revision Date:	SDS Number:	Date of last issue: 14.04.2023
2.0	18.09.2023	203000016229	Country / Language: GB / 6N (EN)

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

1.1 Product identifier

Trade name : ROYCO® 22MS G-81827

Product code : 000000000058322415

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

Use of the Sub-stance/Mixture : Lubricant

Recommended restrictions on use : Reserved for industrial and professional use.

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.
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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.

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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)
sodium nitrite	7632-00-0 231-555-9 007-010-00-4	Ox. Sol. 3; H272 Acute Tox. 3; H301 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 1 - < 2.5
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
(Z)-N-methyl-N-(1-oxo-9-	110-25-8	Acute Tox. 4; H332	>= 0.1 - < 0.25

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octadecenyl)glycine	203-749-3	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	
Substances with a workplace exposure limit :			
molybdenum disulphide	1317-33-5 215-263-9		>= 1 - < 10
Graphite	7782-42-5 231-955-3		>= 1 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- 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 : Remove to fresh air.
Get medical attention if symptoms appear.
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 irregular or respiratory arrest occurs, provide artificial respiration, or oxygen by a trained professional, using a pocket type respirator.
- In case of skin contact : Wash off with soap and water.
Remove contaminated clothing and shoes.
Continue to rinse for at least 20 minutes.
Get medical attention if symptoms occur.
Wash contaminated clothing before reuse.
- 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.
Do not induce vomiting unless directed to do by medical personnel.

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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.
Maintain open airway.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : May cause skin irritation in susceptible persons.
Symptoms may be delayed.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

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 fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
Burning produces irritant fumes.
Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Carbon dioxide (CO₂)
Carbon monoxide
Sulphur oxides
Metal oxides
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Further information : Cool containers/tanks with water spray.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Put on appropriate personal protection equipment.
Do not touch or walk through spilt material.
Evacuate unnecessary personnel.
Keep unnecessary and unprotected personnel from entering.
Provide adequate ventilation.
Do not breathe vapours, aerosols.

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.

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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.

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 : Stable under recommended storage conditions.

7.3 Specific end use(s)

Specific use(s) : Raw material for industry

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
molybdenum disulphide	1317-33-5	TWA	10 mg/m ³ (Molybdenum)	GB EH40
		STEL	20 mg/m ³ (Molybdenum)	GB EH40
Graphite	7782-42-5	TWA (inhalable dust)	10 mg/m ³	GB EH40
		TWA (Respirable dust)	4 mg/m ³	GB EH40
		TWA (inhalable dust)	10 mg/m ³	GB EH40
		TWA (Respirable dust)	4 mg/m ³	GB EH40

Derived No Effect Level (DNEL):

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Substance name	End Use	Exposure routes	Potential health effects	Value
bis(4-(1,1,3,3-tetramethylbutyl)phenyl)amine	Workers	Inhalation	Long-term systemic effects	49.3 mg/m3
	Workers	dermal	Long-term systemic effects	14 mg/kg bw/day
	General exposures	Inhalation	Long-term systemic effects	7.4 mg/m3
	General exposures	dermal	Long-term systemic effects	5 mg/kg bw/day
calcium di(acetate)	General exposures	oral	Long-term systemic effects	5 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	1020.28 mg/m3
	Workers	Inhalation	Acute systemic effects	6121.68 mg/m3
	Workers	Dermal	Long-term systemic effects	11.57 mg/kg bw/day
	Workers	Dermal	Acute systemic effects	69.44 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	498.85 mg/m3
	Consumers	Inhalation	Acute systemic effects	2993.1 mg/m3
	Consumers	Dermal	Long-term systemic effects	5.8 mg/kg bw/day
	Consumers	Dermal	Acute systemic effects	34.72 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	5.8 mg/kg bw/day
	Consumers	Oral	Acute systemic effects	34.72 mg/kg bw/day
	Workers	Inhalation	Long-term exposure, Systemic effects	2 mg/m3
N-1-naphthylaniline	Workers	Inhalation	Short-term exposure, Systemic effects	2 mg/m3
	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

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	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

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
calcium di(acetate)	Fresh water	0.964 mg/l
	Marine water	0.0964 mg/l
	Soil	0.154 mg/kg
	Fresh water sediment	0.726 mg/kg
	Marine sediment	0.0726 mg/kg
	Sewage treatment plant	700 mg/l
sodium nitrite	Fresh water	0.0054 mg/l
	Marine water	0.00616 mg/l
	Sewage treatment plant	21 mg/l
	Intermittent use/release	0.0054 mg/l
	Fresh water sediment	0.0195 mg/kg
	Marine sediment	0.0223 mg/kg
N-1-naphthylaniline	Soil	0.000733 mg/kg
	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

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 : Safety glasses with side-shields

Hand protection

Material : Polyvinyl chloride - PVC
Wearing time : < 60 min

Material : Nitrile rubber
Wearing time : < 60 min

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Remarks	: The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Before removing gloves clean them with soap and water. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Request information on glove permeation properties from the glove supplier.
Skin and body protection	: Wear suitable protective clothing. Impervious clothing Chemical resistant apron
Respiratory protection	: 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.
Protective measures	: These recommendations apply to the product as supplied. Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: paste
Physical state	: solid
Colour	: black
Odour	: mild, hydrocarbon-like
Odour Threshold	: No data available
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flammability	: No data available Remarks: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Flash point	: > 230 °C

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Method: open cup

Ignition temperature : not determined

Decomposition temperature : No data available

Self-Accelerating decomposition temperature (SADT) : No data available

pH : substance/mixture is non-soluble (in water)

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Solubility(ies)

Water solubility : negligible

Solubility in other solvents : partly soluble

Partition coefficient: n-octanol/water : No data available

Vapour pressure : Not applicable

Relative density : 0.8

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

Evaporation rate : No data available

Miscibility with water : No data available

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Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Conditions to avoid : No specific data.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

Carbon oxides
Oxides of calcium
Sulphur 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.

Product:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Information given is based on data obtained from similar substances.

Components:

sodium nitrite:

Acute oral toxicity : LD50 (Rat): 85 mg/kg

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Remarks: Produces methaemoglobin.

N-1-naphthylaniline:

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 420
Acute inhalation toxicity : LC50 (Rat, male and female): 1.01 - 1.85 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

molybdenum disulphide:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity : LD50 (Rat): > 16,000 mg/kg

Graphite:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

sodium nitrite:

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

N-1-naphthylaniline:

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Species : Rabbit
Method : OECD Test Guideline 404

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Result : Irritating to skin.

molybdenum disulphide:

Result : No skin irritation

Graphite:

Assessment : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

sodium nitrite:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irritating to eyes.

N-1-naphthylaniline:

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Risk of serious damage to eyes.

molybdenum disulphide:

Result : No eye irritation

Graphite:

Assessment : No eye irritation

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

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Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	The product is a skin sensitiser, sub-category 1B.
GLP	:	no

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Exposure routes	:	Dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

molybdenum disulphide:

Result	:	Does not cause skin sensitisation.
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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.
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	:	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.
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	:	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.
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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.
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(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Genotoxicity in vitro : Test system: Mammalian-Animal
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test system: Bacteria
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test system: Mammalian-Animal
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Graphite:

Genotoxicity in vitro : Test Type: Ames test
Remarks: No mutagenic effect.

Carcinogenicity

Not classified based on available information.

Components:

Graphite:

Remarks : Weight of evidence does not support classification as a carcinogen

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Effects on fertility : Remarks: Animal testing did not show any effects on fertility.

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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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Remarks	: No known significant effects or critical hazards.
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Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Further information

Product:

Remarks	: No data is available on the product itself.
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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

Components:

sodium nitrite:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.54 - 26.3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 15.4 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
plants : Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox- : 1
icity)

Toxicity to microorganisms : EC50 (activated sludge): > 210 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to fish (Chronic tox- : NOEC: 21 mg/l
icity) : Exposure time: 29 Days
Species: Cyprinus carpio (Carp)
Method: OECD Test Guideline 210
Remarks: Fresh water

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 : EC50 (Daphnia magna (Water flea)): 0.3 mg/l
aquatic invertebrates : End point: Immobilization
Exposure time: 48 h
Analytical monitoring: no
Remarks: nominal concentration

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.93
plants : mg/l
End point: Growth rate

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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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 6.8 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.43 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 6.3 mg/l
Exposure time: 72 h
Method: Regulation (EC) No. 440/2008, Annex, C.3

NOEC (Desmodesmus subspicatus (green algae)): 0.91 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (Bacteria): 1,300 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes

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molybdenum disulphide:

Toxicity to fish	:	LC50 (Fish): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l End point: Growth rate Exposure time: 72 h
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l End point: Respiration inhibition Exposure time: 3 h
Toxicity to fish (Chronic toxicity)	:	NOEC: > 1 mg/l Species: Fish

Graphite:

Toxicity to fish	:	EC50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 134 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 47 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available
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Components:

sodium nitrite:

Biodegradability	:	Result: The methods for determining the biological degradability are not applicable to inorganic substances.
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N-1-naphthylaniline:

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Biodegradability : Test Type: aerobic
Result: Readily biodegradable.
Biodegradation: 85.2 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

molybdenum disulphide:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Graphite:

Biodegradability : Result: Not readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

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

(Z)-N-methyl-N-(1-oxo-9-octadecenyl)glycine:

Partition coefficient: n-octanol/water : log Pow: 3.5 - 4.2
Method: Regulation (EC) No. 440/2008, Annex, A.8

molybdenum disulphide:

Bioaccumulation : Remarks: Accumulation in aquatic organisms is unlikely.

Partition coefficient: n-octanol/water : Remarks: Not applicable

12.4 Mobility in soil

No data available

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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 : There is no data available for this product.
Harmful to aquatic life with long lasting effects.

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.
Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls

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

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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: 2-naphthylamine (Number on list 43, 28, 12)
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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
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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

H272	: May intensify fire; oxidizer.
H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.

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H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
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
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Ox. Sol.	: Oxidizing solids
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

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 -

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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:

|| Aquatic Chronic 3 H412

Classification procedure:

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.