



SAFETY DATA SHEET

NT Norflam TT-01

The safety data sheet is in accordance with Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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

Date issued	12.03.2021
Revision date	15.09.2022

1.1. Product identifier

Product name	NT Norflam TT-01
--------------	------------------

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

Use of the substance / mixture	Fire retardant.
Main intended use	PC-TEC-23 Textile treatment products (excludes dyes and pigments)
Industrial use	Yes
Professional use	Yes
Consumer use	No

1.3. Details of the supplier of the safety data sheet

Company name	Nordtreat Finland Oy
Office address	Mestarintie 11
Postcode	FI-01730
City	Vantaa
Country	Finland
Telephone number	+358 20 730 9330
Email	info@nordtreat.com
Enterprise No.	FI-2927144-5

1.4. Emergency telephone number

Emergency telephone	Telephone number: +358 800 147 111 or +358 9 471 977 Description: Poison Information Centre (in Finland), P.O. Box 790 (Tukholmankatu 17), 00029 HUS Telephone number: 112
---------------------	--

Identification, comments	Description: Emergency telephone number (in Finland)
	Please contact the Emergency Centre in your own country, e.g. 112 in European Union countries.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Eye Irrit. 2; H319
	Skin Irrit. 2; H315
	STOT SE 3; H335
	Aquatic Acute 1; H400
	Aquatic Chronic 3; H412

2.2. Label elements

Hazard pictograms (CLP)



Composition on the label	Potassium carbonate, Citric acid
Signal word	Warning
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H400 Very toxic to aquatic life. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	P261 Avoid breathing mist/vapours/spray. P312 Call a POISON CENTER or doctor / physician if you feel unwell. P280 Wear protective gloves / protective clothing / eye protection / face protection. P302+P352 IF ON SKIN: Wash with plenty of water / . P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice / attention. P273 Avoid release to the environment. P501 Dispose of contents / container in accordance with all local, national and international regulations.

2.3. Other hazards

PBT / vPvB	For results of PBT and vPvB assessment, see point 12.5.
Other hazards	Endocrine disrupting properties: The product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Composition type	Mixture			
Substance	Identification	Classification	Contents	Notes
Potassium carbonate	CAS No.: 584-08-7 EC No.: 209-529-3 REACH Reg. No.: 01-2119532646-36	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	10 - 15 %	
Citric acid	CAS No.: 77-92-9 EC No.: 201-069-1 Index No.: 607-750-00-3	Eye Irrit. 2; H319 STOT SE 3; H335	10 - 15 %	
N-(1,1-dimethylethyl) bis(2-benzothiazolesulfen) amide	CAS No.: 3741-80-8 EC No.: 407-430-1 Index No.: 613-180-00-6 REACH Reg. No.: 01-2120804754-55-xxxx	Aquatic Acute 1; H400; M-factor 100 Aquatic Chronic 1; H410; M-factor 1	0,1 < 1 %	
Substance comments	The full text for all hazard statements are displayed in point 16.			

SECTION 4: First aid measures

4.1. Description of first aid measures

General	Move exposed person immediately to fresh air and keep at rest in a position comfortable for breathing. If the situation is unclear or symptoms persist, seek medical attention. Show this safety data sheet, product container or label to the doctor in attendance. Do not leave patient unattended.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If unconscious, place in recovery position and ensure an open airway. Get medical advice/attention if you feel unwell.
Skin contact	Wash skin immediately with plenty of water and soap. Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention if symptoms occur. Wash/clean contaminated clothing and shoes thoroughly before reuse.
Eye contact	Immediately flush eyes with plenty of water for several minutes, holding eyelids open. Remove contact lenses, if present and easy to do, and continue rinsing. Get medical attention if eye irritation occurs.
Ingestion	Rinse mouth thoroughly. Get immediate medical advice/attention. Do not induce vomiting unless directed to do so by the doctor. Do not give milk or alcoholic beverages to drink. Never give anything by mouth to an unconscious person.
Recommended personal protective equipment for first aid responders	Use personal protective equipment as required.

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms and effects	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Delayed symptoms and effects	None known.

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

Other information	Treat symptomatically.
-------------------	------------------------

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO ₂).
Improper extinguishing media	Do not use water jet as an extinguisher, as this may spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	Vapors may form a flammable or explosive mixture with air.
Hazardous combustion products	When heated and in case of fire, toxic vapours/gases may be formed. Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrogen oxides (NO _x). Sulphurous gases (SO _x).

5.3. Advice for firefighters

Personal protective equipment	Wear appropriate protective equipment and self-contained breathing apparatus. EN469.
Fire fighting procedures	Evacuate area. Move exposed containers from the danger area if safe to do so. Use water spray to cool product containers and tanks near the fire.
Other information	Discharge of extinguishing waters into drains, sewers or waterways must be prevented.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Ensure effective ventilation at the leak site. Stop leak if safe to do so. The surroundings of the leak must be evacuated. Keep unnecessary and unprotected people from entering. Remove all sources of ignition.
Personal protection measures	Wear appropriate personal protective equipment.

6.2. Environmental precautions

Environmental precautionary measures	Prevent entry of spilt material into drains, sewers, waterways or soil. In case of environmental contamination, inform local authorities.
--------------------------------------	---

6.3. Methods and material for containment and cleaning up

Clean up	Absorb spill with inert material (e.g. sand, diatomaceous earth, commercial absorbent) and collect in clearly labeled containers for disposal.
----------	--

6.4. Reference to other sections

Other instructions	Safe handling: see point 7. Personal protective equipment: see point 8. Waste disposal: see point 13.
--------------------	---

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation (use local exhaust ventilation if necessary). Avoid contact with skin, eyes, and clothing. Avoid breathing vapours or mist. Use appropriate personal protective equipment while handling the product (see point 8). Provide easy access to water supply and eye wash facilities. Persons susceptible to allergic reactions should not use this product.

Protective safety measures

Advice on general occupational hygiene

Handle in accordance with good industrial hygiene and safety practices. Do not eat, drink or smoke when using this product. Take off contaminated clothing and protective equipment before entering break room. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Conditions to avoid

Store away from food, drink and animal feedstuffs.

Conditions for safe storage

Technical measures and storage conditions

Store in a dry, well-ventilated area.

Requirements for storage rooms and vessels

Keep containers tightly closed. Do not store in unlabelled containers.

7.3. Specific end use(s)

Specific use(s)

None reported.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Control parameters comments

United Kingdom: No applicable exposure limit values.

DNEL / PNEC

Substance

N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide

DNEL

Group: Professional

Route of exposure: Long-term dermal (local)

Value: 1.06 mg/cm²

Group: Professional

Route of exposure: Long-term dermal (systemic)

Value: 10.9 mg/kg bw/day

Group: Professional

Route of exposure: Long-term inhalation (systemic)

Value: 38.5 mg/m³

Group: Consumer

Route of exposure: Long-term oral (systemic)

Value: 5.46 mg/kg bw/day

Group: Consumer

PNEC

Route of exposure: Long-term dermal (local)
Value: 0.53 mg/cm²

Group: Consumer
Route of exposure: Long-term dermal (systemic)
Value: 5.47 mg/kg bw/day

Group: Consumer
Route of exposure: Long-term inhalation (systemic)
Value: 9.5 mg/m³

Route of exposure: Freshwater
Value: 0.0041 mg/l

Route of exposure: Saltwater
Value: 0.00041 mg/l

Route of exposure: Water
Value: 0.0041 mg/l
Comments: Intermittent release

Route of exposure: Sewage treatment plant STP
Value: 0.19 mg/l

Route of exposure: Freshwater sediments
Value: 16.66 mg/kg
Comments: dwt

Route of exposure: Saltwater sediments
Value: 1.67 mg/kg
Comments: dwt

Route of exposure: Soil
Value: 3.32 mg/kg
Comments: dwt

Route of exposure: Food products
Value: 243 mg/kg

8.2. Exposure controls

Safety signs



Precautionary measures to prevent exposure

Technical measures to prevent exposure

If general ventilation is not adequate to keep airborne concentrations under given occupational exposure limits, local exhaust ventilation must be used.

Eye / face protection

Suitable eye protection

Use tight-fitting safety goggles (EN 166).

Hand protection

Suitable gloves type	Wear appropriate chemical resistant safety gloves (EN 374).
Suitable materials	Contact glove manufacturer for specific advice on glove selection.
Hand protection, comments	Follow the manufacturer's instructions in the use of protective gloves.

Skin protection

Suitable protective clothing	Wear appropriate chemical-resistant, impervious protective clothing (with long sleeves) and footwear.
------------------------------	---

Respiratory protection

Respiratory protection necessary at	In case of inadequate ventilation use suitable respirator.
-------------------------------------	--

Appropriate environmental exposure control

Environmental exposure controls	Prevent entry into drains, sewers or waterways.
---------------------------------	---

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Liquid
Colour	Clear.
Odour	Odourless or mild odor.
Odour limit	Comments: Unknown.
pH	Comments: Neutral.
Melting point / melting range	Comments: Unknown.
Freezing point	Comments: Unknown.
Boiling point / boiling range	Value: > 100 °C
Flash point	Comments: Unknown.
Evaporation rate	Comments: Unknown.
Flammability	Unknown.
Lower explosion limit with unit of measurement	Comments: Unknown.
Upper explosion limit with units of measurement	Comments: Unknown.
Explosion limit	Comments: Unknown.
Vapour pressure	Comments: Unknown.
Vapour density	Comments: Unknown.
Particle characteristics	Comments: Not relevant.
Relative density	Comments: Unknown.
Density	Value: 1114 kg/m ³

Solubility	Comments: Miscible in water.
Partition coefficient: n-octanol/ water	Comments: Unknown.
Auto-ignition temperature	Comments: Unknown.
Decomposition temperature	Comments: Unknown.
Viscosity	Comments: Din cup 10,44 s
Explosive properties	Not classified as explosive.
Oxidising properties	Not classified as oxidising.

9.2. Other information

9.2.2. Other safety characteristics

Comments	None reported.
----------	----------------

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Not reactive under normal use and storage conditions.
------------	---

10.2. Chemical stability

Stability	Chemically stable under normal storage conditions.
-----------	--

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No decomposition under normal use and storage conditions.
------------------------------------	---

10.4. Conditions to avoid

Conditions to avoid	Keep away from all possible sources of ignition (sparks, flames and hot surfaces).
---------------------	--

10.5. Incompatible materials

Materials to avoid	No known incompatible materials.
--------------------	----------------------------------

10.6. Hazardous decomposition products

Hazardous decomposition products	In a fire or if overheated, harmful compounds may be formed. Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrogen oxides (NO _x).
----------------------------------	---

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Substance	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide
Acute toxicity	Effect tested: LD50 Route of exposure: Oral Value: > 5000 mg/kg

	Animal test species: Rat Effect tested: LD50 Route of exposure: Dermal Value: > 2000 mg/kg Animal test species: Rabbit
Other toxicological data	There is no toxicological data available about the product as such. The product is not classified as acutely toxic.

Other information regarding health hazards

Assessment of skin corrosion / irritation, classification	Causes skin irritation.
Assessment of eye damage or irritation, classification	Causes serious eye irritation.
Sensitisation	The product is not classified as a respiratory or skin sensitiser.
Mutagenicity	The product is not classified as a mutagen.
Assessment of carcinogenicity, classification	The product is not classified as a carcinogen.
Reproductive toxicity	The product is not classified as toxic to reproduction.
Assessment of specific target organ toxicity - single exposure, classification	May cause respiratory irritation.
Assessment of specific target organ toxicity - repeated exposure, classification	The product is not classified as toxic to specific target organs through repeated exposure.
Assessment of aspiration hazard, classification	The product is not classified as an aspiration hazard.

11.2 Other information

Endocrine disruption	The product does not contain any known or suspected endocrine disruptors.
Other information	No other health effects reported.

SECTION 12: Ecological information

12.1. Toxicity

Substance	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide
Aquatic toxicity, fish	Toxicity type: Acute Value: > 2,7 mg/l Effect dose concentration: LC50 Test duration: 96 hour(s) Species: Pimephales promelas Toxicity type: Chronic Value: 0.041 mg/l Effect dose concentration: NOEC Test duration: 89 day(s)
Substance	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide

Aquatic toxicity, algae	Toxicity type: Acute Value: > 0,87 mg/l Effect dose concentration: EC50 Test duration: 96 hour(s) Species: Pseudokirchneriella subcapitata
Substance	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide
Aquatic toxicity, crustacean	Toxicity type: Acute Value: 5 µg/l Effect dose concentration: EC50 Test duration: 48 hour(s) Species: Daphnia magna Toxicity type: Chronic Value: > 0.16 mg/l Effect dose concentration: NOEC Test duration: 21 day(s) Species: Daphnia magna
Ecotoxicity	There is no ecotoxicological data available about the product as such. On basis of its components, the product is very toxic to aquatic life with long-lasting effects. Prevent entry into drains, sewers or waterways.

12.2. Persistence and degradability

Persistence and degradability description/evaluation	The product contains substances which are not expected to be biodegradable.
--	---

12.3. Bioaccumulative potential

Bioaccumulation, evaluation	Unlikely to bioaccumulate.
-----------------------------	----------------------------

12.4. Mobility in soil

Mobility	The product is soluble in water.
----------	----------------------------------

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	Not Classified as PBT/vPvB by current EU criteria.
------------------------------------	--

12.6. Endocrine disrupting properties

Endocrine disrupting properties	The product does not contain any known or suspected endocrine disruptors.
---------------------------------	---

12.7. Other adverse effects

Additional ecological information	Avoid release to the environment.
-----------------------------------	-----------------------------------

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the chemical	Prevent entry into drains, sewers or waterways.
--	---

Appropriate methods of disposal for the contaminated packaging	After usage, empty the packing completely. Uncleaned empty containers are to be handled in the same way as the ones containing products. Do not reuse containers. Do not cut, puncture, or weld empty containers.
Other information	Dispose of in compliance with local and national regulations.

SECTION 14: Transport information

14.1. UN number

ADR/RID/ADN	3082
IMDG	3082
ICAO/IATA	3082

14.2. UN proper shipping name

Proper shipping name English ADR/RID/ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
ADR/RID/ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name/danger releasing substance ADR/RID/ADN	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name/danger releasing substance IMDG	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide
ICAO/IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name/danger releasing substance ICAO/IATA	N-(1,1-dimethylethyl)bis(2-benzothiazolesulfen)amide

14.3. Transport hazard class(es)

ADR/RID/ADN	9
Classification code ADR/RID/ADN	M6

14.4. Packing group

ADR/RID/ADN	III
IMDG	III
ICAO/IATA	III

14.5. Environmental hazards

IMDG Marine pollutant	Yes
-----------------------	-----

14.6. Special precautions for user

14.7. Maritime transport in bulk according to IMO instruments

Transport in bulk (yes/no)	No
----------------------------	----

Additional information

Hazard label ADR/RID/ADN	9
Hazard label IMDG	9
Hazard label ICAO/IATA	9

ADR/RID Other information

Tunnel restriction code	-
Transport category	3
Hazard No.	90

IMDG Other information

EmS	F-A, S-F
-----	----------

SECTION 15: Regulatory information

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

Legislation and regulations	No specific regulations.
-----------------------------	--------------------------

15.2. Chemical safety assessment

Chemical safety assessment performed	No
--------------------------------------	----

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3)	H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. 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.
CLP classification, notes	The classification is based on the calculation method in accordance with Regulation (EC) No 1272/2008 [CLP / GHS].
Training advice	Read safety data sheet.
Recommended restrictions on use	Do not handle until all safety precautions have been read and understood. Restricted to professional users.
Key literature references and sources for data	SDSs for product components
Abbreviations and acronyms used	DNEL: Derived No-Effect Level LC50: Lethal concentration 50 % (median lethal concentration): concentration which kills 50 % of exposed organisms LD50: Lethal dose 50 % (median lethal dose): dose which kills 50 % of exposed organisms NOAEL: No Observed Adverse Effect Level: loading rate at which no adverse effects are observed PBT: Persistent, Bioaccumulative and Toxic substance.

	PNEC: Predicted No-Effect Concentration vPvB: very Persistent and very Bioaccumulative substance
Information added, deleted or revised	19.3.2021 Transport information changed. 15.9.2022: Classification and labelling changed.
Last update date	15.09.2022
Version	1
Prepared by	Sweco Industry Oy
Comments	The information of this safety data sheet is based on existing public information sources, such as current legislation, available at the time of publication of the completed safety data sheet, and information on the Customer's products that has been provided by the Customer to Sweco. The Customer is responsible that the information provided to Sweco. is accurate and up to date.