SAFETY DATA SHEET

SPECIALTY ELECTRONIC MATERIALS SWITZERLAND GMBH

Product name: MOLYKOTE® 1000 Anti-Seize Thread Paste **Issue Date:** 2026.01.16
Print Date: 2026.01.21

SPECIALTY ELECTRONIC MATERIALS SWITZERLAND GMBH encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: MOLYKOTE® 1000 Anti-Seize Thread Paste

Recommended use of the chemical and restrictions on use
Identified uses: Lubricants and lubricant additives

COMPANY IDENTIFICATION
SPECIALTY ELECTRONIC MATERIALS
SWITZERLAND GMBH
GROSSMATTE 4
6014 LUZERN
SWITZERLAND

Customer Information Number: 00800-3876-6838
SDSQuestion-EU@dupont.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +(41)- 435082011
Local Emergency Contact: +1 703-741-5970

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Short-term (acute) aquatic hazard - Category 1 - H400
Long-term (chronic) aquatic hazard - Category 1 - H410
For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements

Hazard pictograms



Signal word: WARNING

Hazard statements
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental information
The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity:
11.1 %

Other hazards
This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Inorganic and organic compounds, in mineral oil
This product is a mixture.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification
CASRN – **EC-No.** – **Index-No.** 029-019-01-X	>= 2.5 - < 10.0 %	Copper flakes	Acute Tox. - 4 - H302 Acute Tox. - 3 - H331 Eye Irrit. - 2 - H319 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 7440-66-6 **EC-No.** 231-175-3 **Index-No.** 030-001-01-9	>= 2.5 - < 10.0 %	Zinc powder - zinc dust (stabilized)	Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 61791-53-5 **EC-No.** 263-186-4 **Index-No.** –	>= 0.25 - < 1.0 %	N-Tallow Alkyltrimethylenediamine Oleate	Skin Irrit. - 2 - H315 Eye Irrit. - 2 - H319 STOT RE - 2 - H373 Aquatic Acute - 1 - H400 Aquatic Chronic - 2 - H411
CASRN	>= 30.0 - < 40.0 %	Distillates, petroleum, solvent-	Not classified

64742-56-9 **EC-No.** 265-159-2 **Index-No.** 649-469-00-9		dewaxed light paraffinic	
CASRN 7789-75-5 **EC-No.** 232-188-7 **Index-No.** –	>= 20.0 - < 30.0 %	Calcium difluoride	Not classified
CASRN 7782-42-5 **EC-No.** 231-955-3 **Index-No.** –	>= 10.0 - < 20.0 %	Graphite	Not classified

For the full text of the H-Statements mentioned in this Section, see Section 16.

Note
Distillates, petroleum, solvent-dewaxed light paraffinic:
The classification as a carcinogen need not to apply because the substance contains less than 3% DMSO extract as measured by IP 346. Note L of Annex VI to Regulation (EC) 1272/2008.

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: If inhaled Move person to fresh air; if effects occur, consult a physician.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If skin irritation occurs: Get medical advice/ attention.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Water spray. Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media: None known..

Special hazards arising from the substance or mixture

Hazardous combustion products: Fluorine compounds. Carbon oxides. Metal oxides.

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health..

Advice for firefighters

Fire Fighting Procedures: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage..
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Do not release the product to the aquatic environment above defined regulatory levels Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not swallow. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice.
Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.
Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Distillates, petroleum, solvent-dewaxed light paraffinic	ACGIH	TWA Inhalable particulate matter	5 mg/m3
	Further information: A4: Not classifiable as a human carcinogen		
	ARE OEL	TWA Mist	0.2 mg/m3
Calcium difluoride	ACGIH	TWA	2.5 mg/m3 , Fluorine
	Further information: A4: Not classifiable as a human carcinogen		
	ARE OEL	TWA	2.5 mg/m3 , Fluorine
	Further information: A4: Not Classifiable as a Human Carcinogen; BEI: ACGIH has recommended a Biological Exposure Index or Indices for this substance		
	2000/39/EC	TWA	2.5 mg/m3 , Fluorine
	Further information: Indicative		
Graphite	ACGIH	TWA Respirable particulate matter	2 mg/m3
	ARE OEL	TWA Respirable dust	2 mg/m3

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Calcium difluoride	7789-75-5	Fluoride (Fluorine)	Urine	Prior to shift (16 hours after exposure ceases)	2 mg/l	ACGIH BEI
		Fluoride (Fluorine)	Urine	End of shift (As soon as possible after exposure ceases)	3 mg/l	ACGIH BEI

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	paste
Color	brown
Odor	slight
Odor Threshold	No data available
pH	Substance/mixture is non-soluble (in water).Substance/mixture is non-soluble (in water).
Melting point/ range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	Not applicable
Flash point	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	Not classified as a flammability hazard
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not applicable

Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.26
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Molecular weight	No data available
Particle size	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents.

Conditions to avoid: None known.

Incompatible materials: Oxidizing agents

Hazardous decomposition products:
Decomposition products can include and are not limited to: 1-Butene. Sodium.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Acute toxicity estimate. > 2,000 mg/kg Calculation method

Acute dermal toxicity
Product test data not available. Refer to component data.

Acute inhalation toxicity
Acute toxicity estimate. 4 Hour. dust/mist. > 5 mg/l Calculation method

Skin corrosion/irritation

Product test data not available. Refer to component data.

Serious eye damage/eye irritation
Product test data not available. Refer to component data.

Sensitization
Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Single Exposure)
Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Product test data not available. Refer to component data.

Carcinogenicity
Product test data not available. Refer to component data.

Teratogenicity
Product test data not available. Refer to component data.

Reproductive toxicity
Product test data not available. Refer to component data.

Mutagenicity
Product test data not available. Refer to component data.

Aspiration Hazard
Product test data not available. Refer to component data.

COMPONENTS INFLUENCING TOXICOLOGY:

Copper flakes

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause moderate eye irritation.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.
Information given is based on data obtained from similar substances.

Carcinogenicity
Animal testing did not show any carcinogenic effects.

Teratogenicity
Did not cause birth defects in laboratory animals.

Reproductive toxicity
In animal studies, did not interfere with reproduction.

Mutagenicity
Animal genetic toxicity studies were negative. This material was not mutagenic in an Ames bacterial assay.

Aspiration Hazard
No aspiration toxicity classification

Zinc powder - zinc dust (stabilized)

Acute dermal toxicity
The dermal LD50 has not been determined.

Skin corrosion/irritation
Essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight eye irritation.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.
Information given is based on data obtained from similar substances.

Carcinogenicity
No relevant data found.

Teratogenicity
For similar material(s): Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For similar material(s): In animal studies, did not interfere with reproduction.

Mutagenicity
For similar material(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases.

For similar material(s): Animal genetic toxicity studies were negative.

Aspiration Hazard
No aspiration toxicity classification

N-Tallow Alkyltrimethylenediamine Oleate

Acute dermal toxicity
Based on data from similar materials LD50. Rat. > 2,000 mg/kg OECD Test Guideline 402

Skin corrosion/irritation
Based on data from similar materials

Serious eye damage/eye irritation
Based on data from similar materials

Sensitization
Based on data from similar materials

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on data from similar materials

Distillates, petroleum, solvent-dewaxed light paraffinic

Acute dermal toxicity
LD50. Rabbit. > 5,000 mg/kg OECD Test Guideline 402

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.
Information given is based on data obtained from similar substances.

Carcinogenicity
Animal testing did not show any carcinogenic effects. Information given is based on data obtained from similar product.

Teratogenicity
Did not cause birth defects in laboratory animals. Information given is based on data obtained from similar substances.

Reproductive toxicity
In animal studies, did not interfere with fertility. Information given is based on data obtained from similar substances.

Mutagenicity
This material was not mutagenic in an Ames bacterial assay. Animal genetic toxicity studies were negative. In vitro genetic toxicity studies were negative. Information given is based on data obtained from similar substances.

Aspiration Hazard
No aspiration toxicity classification

Calcium difluoride

Acute dermal toxicity
Information given is based on data obtained from similar substances. LD50. Rabbit. > 2,000 mg/kg

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.

Sensitization
Did not demonstrate the potential for contact allergy in mice.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carcinogenicity
Animal testing did not show any carcinogenic effects.

Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals. Information given is based on data obtained from similar substances.

Reproductive toxicity
In animal studies, did not interfere with reproduction. Information given is based on data obtained from similar substances.

Mutagenicity
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative. Information given is based on data obtained from similar substances.

Aspiration Hazard
No aspiration toxicity classification

Graphite

Acute dermal toxicity
The dermal LD50 has not been determined.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation
May cause slight temporary eye irritation.

Sensitization

Did not demonstrate the potential for contact allergy in mice.

Specific Target Organ Systemic Toxicity (Single Exposure)
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
In animal studies, did not interfere with reproduction.

Mutagenicity
In vitro genetic toxicity studies were negative.

Aspiration Hazard
No aspiration toxicity classification

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Copper flakes

Acute toxicity to fish
LC50. Oncorhynchus mykiss (rainbow trout). 96 Hour. 0.068 mg/l

Acute toxicity to aquatic invertebrates
EC50. Daphnia magna (Water flea). 48 Hour. 0.034 mg/l. OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Information given is based on data obtained from similar substances.
EC50. Pseudokirchneriella subcapitata (green algae). 72 Hour. 0.03 mg/l. OECD Test Guideline 201
NOEC. Algae. 10 d. 0.022 mg/l. OECD Test Guideline 201

Chronic toxicity to fish
NOEC. Oncorhynchus mykiss (rainbow trout). 61 d. 0.024 mg/l

Chronic toxicity to aquatic invertebrates
NOEC. Daphnia magna (Water flea). 21 d. 0.0368 mg/l

Zinc powder - zinc dust (stabilized)

Acute toxicity to fish
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).
LC50. Oncorhynchus mykiss (rainbow trout). 96 Hour. 0.169 mg/l

Acute toxicity to aquatic invertebrates
EC50. Ceriodaphnia dubia (water flea). 48 Hour. 0.413 mg/l

Acute toxicity to algae/aquatic plants
EC50. Scenedesmus capricornutum (fresh water algae). 96 Hour. 0.136 mg/l
NOEC. Pseudokirchneriella subcapitata (green algae). 96 Hour. 0.019 mg/l

Chronic toxicity to fish
NOEC. Oncorhynchus mykiss (rainbow trout). 25 d. 0.025 mg/l

Chronic toxicity to aquatic invertebrates
NOEC. Daphnia magna (Water flea). 21 d. 0.037 - 0.4 mg/l

N-Tallow Alkyltrimethylenediamine Oleate

Acute toxicity to fish
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

Acute toxicity to aquatic invertebrates
Based on data from similar materials
EC50. Daphnia magna (Water flea). 48 Hour. > 0.1 - 1 mg/l

Acute toxicity to algae/aquatic plants
Based on data from similar materials
EC50. 72 Hour. > 0.01 - 0.1 mg/l. OECD Test Guideline 201
Based on data from similar materials
NOEC. 72 Hour. > 0.01 - 0.1 mg/l. OECD Test Guideline 201

Chronic toxicity to aquatic invertebrates
Based on data from similar materials
EC10. Daphnia (water flea). > 1 mg/l

Distillates, petroleum, solvent-dewaxed light paraffinic

Acute toxicity to fish
Information given is based on data obtained from similar substances.
LL50. Pimephales promelas (fathead minnow). 96 Hour. > 100 mg/l. OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
Information given is based on data obtained from similar substances.
EC50. Daphnia magna (Water flea). 48 Hour. > 10,000 mg/l. OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
Information given is based on data obtained from similar substances.
NOEL. Pseudokirchneriella subcapitata (green algae). 72 Hour. > 100 mg/l. OECD Test Guideline 201

Toxicity to bacteria
Based on data from similar materials
NOEC. 10 min. > 1.93 mg/l. DIN 38 412 Part 8

Chronic toxicity to fish
For similar material(s):
NOEC. Oncorhynchus mykiss (rainbow trout). 14 d. > 1,000 mg/l

Chronic toxicity to aquatic invertebrates
Information given is based on data obtained from similar product.
NOEC. Daphnia magna. 21 d. 10 mg/l

Calcium difluoride

Acute toxicity to fish
Information given is based on data obtained from similar substances.
LC50. Oncorhynchus mykiss (rainbow trout). 96 Hour. 184.6 mg/l

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
Information given is based on data obtained from similar substances.
EC50. Hyalella azteca (Amphipod). 46 Hour. 8.1 - 32.9 mg/l

Acute toxicity to algae/aquatic plants
Information given is based on data obtained from similar substances.
EC50. Pseudokirchneriella subcapitata (green algae). 72 Hour. > 220 mg/l. OECD Test Guideline 201
Information given is based on data obtained from similar substances.
NOEC. Pseudokirchneriella subcapitata (green algae). 72 Hour. > 220 mg/l. OECD Test Guideline 201

Chronic toxicity to fish
Based on data from similar materials
NOEC. Oncorhynchus mykiss (rainbow trout). 28 d. 4 mg/l

Chronic toxicity to aquatic invertebrates
Based on data from similar materials
NOEC. Daphnia magna (Water flea). 21 d. 14.4 mg/l

Graphite

Acute toxicity to fish
No toxicity at the limit of solubility
LC50. Danio rerio (zebra fish). 96 Hour. > 100 mg/l. OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
No toxicity at the limit of solubility
EC50. Daphnia magna (Water flea). 48 Hour. > 100 mg/l. OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
EC50. Raphidocelis subcapitata (freshwater green alga). 72 Hour. > 100 mg/l. OECD Test Guideline 201
NOEC. Raphidocelis subcapitata (freshwater green alga). 72 Hour. >= 100 mg/l. OECD Test Guideline 201

Toxicity to bacteria
EC50. 3 Hour. > 1,012.5 mg/l. OECD Test Guideline 209

Persistence and degradability

Copper flakes

Biodegradability: Biodegradation is not applicable.

Zinc powder - zinc dust (stabilized)

Biodegradability: Biodegradation is not applicable.

N-Tallow Alkyltrimethylenediamine Oleate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Based on data from similar materials 10-day Window: Pass
Biodegradation: 65 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Distillates, petroleum, solvent-dewaxed light paraffinic

Biodegradability: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). Information given is based on data obtained from similar substances.
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Calcium difluoride

Biodegradability: Not applicable

Graphite

Biodegradability: Not applicable

Bioaccumulative potential

Copper flakes

Bioaccumulation: Not applicable

Zinc powder - zinc dust (stabilized)

Bioaccumulation: No relevant data found.
Bioconcentration factor (BCF): 177 Fish

N-Tallow Alkyltrimethylenediamine Oleate

Bioaccumulation: No relevant data found.

Distillates, petroleum, solvent-dewaxed light paraffinic

Bioaccumulation: No data available Not applicable

Calcium difluoride

Bioaccumulation: Bioaccumulation is unlikely. Information given is based on data obtained from similar substances. Not applicable

Graphite

Bioaccumulation: Not applicable Not applicable

Mobility in soil

Zinc powder - zinc dust (stabilized)

No relevant data found.

N-Tallow Alkyltrimethylenediamine Oleate
No relevant data found.

Distillates, petroleum, solvent-dewaxed light paraffinic
Expected to be relatively immobile in soil (Log Koc > 3).
estimated

Graphite
No relevant data found.

Results of PBT and vPvB 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.

Other adverse effects

Copper flakes
No data available

Zinc powder - zinc dust (stabilized)
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

N-Tallow Alkyltrimethylenediamine Oleate
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Distillates, petroleum, solvent-dewaxed light paraffinic
No relevant data found.

Calcium difluoride
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Graphite
This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods:
Do not dump into any sewers, on the ground, or into any body of water. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Zinc, Copper flakes)

UN number	UN 3077
Class	9
Packing group	III
Environmental hazards	Zinc, Copper flakes

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Zinc, Copper flakes)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	Zinc, Copper flakes
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(Zinc, Copper flakes)
UN number	UN 3077
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Listed in Regulation: ENVIRONMENTAL HAZARDS
Number in Regulation: E1
100 t
200 t

Classification and labeling have been performed according to Regulation (EC) No 1272/2008.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

H331	Toxic if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Revision

Identification Number: 1390520 / A715 / Issue Date: 2026.01.16 / Version: 10.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

2000/39/EC	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
ARE OEL	Abu Dhabi Emirate - EHSMS Manual, Volume 2, Environment, Health and Safety Protection Policies, Section 2, Part I: EEPP Air Quality Standards
TWA	Limit Value - eight hours
Acute Tox.	Acute toxicity
Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Eye Irrit.	Eye irritation
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure

Full text of other abbreviations

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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation 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

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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