

SAFETY DATA SHEET

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC

Product name: MOLYKOTE® G-N Metal Assembly Paste Issue Date: 07/05/2021

Print Date: 07/14/2021

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC 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. IDENTIFICATION

Product name: MOLYKOTE® G-N Metal Assembly Paste Recommended use of the chemical and restrictions on use

Identified uses: Lubricants and lubricant additives

COMPANY IDENTIFICATION

DDP SPECIALTY ELECTRONIC MATERIALS US 9, LLC 974 Centre Road Wilmington DE 19805 UNITED STATES

Customer Information Number: 833-338-7668

SDSQuestion-NA@dupont.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1-800-424-9300 **Local Emergency Contact:** 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200 Not a hazardous substance or mixture.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Inorganic compounds in mineral oil

This product is a mixture.

Component CASRN Concentration

Distillates, petroleum, solvent-dewaxed light paraffinic	64742-56-9	>= 43.0 - <= 53.0 %
Molybdenum disulfide	1317-33-5	>= 14.0 - <= 18.0 %
N,N'-Distearoylethylene diamine	110-30-5	> 2.0 - < 3.0 %
ALUMINUM PHOSPHATE SOLUTION	7784-30-7	> 2.0 - < 3.0 %
Lubricating oils, petroleum, hydrotreated spent	64742-58-1	>= 1.5 - <= 1.9 %
Fumed silica (generic)	112945-52-5	>= 1.2 - <= 1.8 %

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

Skin contact: Wash off with plenty of water.

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.

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

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

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: Sulphur oxides Metal oxides Nitrogen oxides (NOx) Oxides of phosphorus Carbon oxides Silicon 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: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: 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: 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	OSHA Z-1	TWA Mist	5 mg/m3
paraffinic	ACGIH	TWA Inhalable	5 mg/m3
		particulate matter	3
			tation; A4: Not classifiable as
	a human carcinogen		
	CAL PEL	PEL particulate	5 mg/m3
	NIOSH REL	sampled by method that does TWA Mist	5 not collect vapor. 5 mg/m3
	NIOSH REL	ST Mist	10 mg/m3
Molybdenum disulfide	OSHA Z-1	TWA total dust	15 mg/m3 ,
Morybuerium disumde	O3/1A 2-1	T WA total dust	Molybdenum
	ACGIH	TWA Inhalable	10 mg/m3 ,
		particulate matter	Molybdenum
	ACGIH	TWA Respirable	3 mg/m3 ,
		particulate matter	Molybdenum
	CAL PEL	PEL Total dust	10 mg/m3 ,
			Molybdenum
	CAL PEL	PEL respirable dust	3 mg/m3 ,
		fraction	Molybdenum ge of the particulate used for
	Percent Passing Selector 0 1	iic Diameter in Micrometers ()97 2	91 50
	7	9 8	
NI NI Diete ever dethydere	10		40
N,N'-Distearoylethylene diamine	ACGIH	TWA Inhalable	10 mg/m3
diamine	Further information: LRT irr:	particulate matter Lower Respiratory Tract irrit	ation: I: Does not include
			an carcinogen; varies: varies
	ACGIH	TWA Respirable	3 mg/m3
		particulate matter	
		: Lower Respiratory Tract irrit	ation; J: Does not include an carcinogen; varies: varies
ALUMINUM PHOSPHATE	ACGIH	TWA Respirable	1 mg/m3 , Aluminium
SOLUTION		particulate matter	
		Lower Respiratory Tract irriticity: Neurotoxicity; A4: Not o	
Lubricating oils, petroleum,	ACGIH	TWA Inhalable	5 mg/m3
hydrotreated spent		particulate matter	3 -
7	Further information: LIDT irr		tation; A4: Not classifiable as
		. Oppor recognitiony traction	tation, 714. Not olassinable as
Fumed silica (generic)	a human carcinogen OSHA Z-3	TWA	20 million particles

Further information: a: Based on impinger samples counted by light-field techniques.; mppcf X 35.3 = million particles per cubic meter = particles per c.c		
OSHA Z-3	TWA Dust	20 Million particles
		per cubic foot, Silica
Further information: a: Based on impinger samples counted by light-field techniques.; mppcf X 35.3 = million particles per cubic meter = particles per c.c		
OSHA Z-3	TWA Dust	80 mg/m3 / %SiO2,
		Silica

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.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state paste
Color dark grey
Odor slight

Odor Threshold

PH

Not applicable

Melting point/range

No data available

Not applicable

Flash point closed cup 173 °C (343 °F)

Evaporation Rate (Butyl Acetate Not applicable

= 1)

Flammability (solid, gas) Not classified as a flammability hazard

Lower explosion limit No data available

Upper explosion limitNo data availableVapor PressureNot applicableRelative Vapor Density (air = 1)No data available

Relative Density (water = 1) 1.35

Water solubility

No data available

Partition coefficient: n
No data available

octanol/water

Auto-ignition temperature

Decomposition temperature

Dynamic Viscosity

Kinematic Viscosity

Explosive properties

No data available
No data available
Not applicable
Not applicable
Not explosive

Oxidizing properties The substance or mixture is not classified as oxidizing.

Molecular weightNo data availableParticle sizeNo 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

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Acute oral toxicity

Product test data not available. Refer to component data.

Acute dermal toxicity

Product test data not available. Refer to component data.

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Acute inhalation toxicity

Product test data not available. Refer to component data.

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:

Distillates, petroleum, solvent-dewaxed light paraffinic

Acute oral toxicity

LD50, Rat, > 5,000 mg/kg OECD Test Guideline 401

Acute dermal toxicity

LD50, Rabbit, > 5,000 mg/kg OECD Test Guideline 402

Acute inhalation toxicity

Based on data from similar materials LC50, Rat, 4 Hour, dust/mist, > 5.53 mg/l OECD Test Guideline 403

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

Essentially nonirritating to eyes.

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)

Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on information for a similar material:

In animals, effects have been reported on the following organs:

Lung.

Carcinogenicity

Did not cause cancer in laboratory animals.

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

Based on information for a similar material: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on available information, aspiration hazard could not be determined.

Molybdenum disulfide

Acute oral toxicity

LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity

LD50, Rat, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, > 2.82 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

For skin 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)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

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

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

N,N'-Distearoylethylene diamine

Acute oral toxicity

LD50, Rat, male and female, > 2,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

Acute dermal toxicity

LD50, Rabbit, > 20,000 mg/kg

Acute inhalation toxicity

The LC50 has not been determined.

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation

May cause slight eye irritation.

Sensitization

For skin sensitization:

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Carcinogenicity

Did not cause cancer in laboratory animals.

Mutagenicity

In vitro genetic toxicity studies were negative.

Animal genetic toxicity studies were negative.

ALUMINUM PHOSPHATE SOLUTION

Acute oral toxicity

LD50, Rat, female, > 2,000 mg/kg OECD Test Guideline 420 No deaths occurred at this concentration.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

The dermal LD50 has not been determined.

Acute inhalation toxicity

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.1 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Serious eye damage/eye irritation

May cause slight temporary eye irritation.

Corneal injury is unlikely.

Sensitization

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

For similar material(s):

In animals, effects have been reported on the following organs:

Kidney

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

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Lubricating oils, petroleum, hydrotreated spent

Acute oral toxicity

LD50, Rat, > 2,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 4,480 mg/kg

Fumed silica (generic)

Acute oral toxicity

LD50, Rat, > 10,000 mg/kg

Acute dermal toxicity

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

The LC50 has not been determined.

Skin corrosion/irritation

Essentially nonirritating to skin.

Mechanical injury only.

Serious eye damage/eye irritation

Solid or dust may cause irritation or corneal injury due to mechanical action.

Sensitization

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

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

Toxicity

Distillates, petroleum, solvent-dewaxed light paraffinic

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on data from similar materials

LC50, Pimephales promelas (fathead minnow), 96 Hour, > 100 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, > 10,000 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants

Based on data from similar materials

EC50, 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 aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, 10 mg/l

Molybdenum disulfide

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). For similar material(s):

LC50, Fish, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

Based on data from similar materials

ErC50, algae, 72 Hour, Growth rate, > 100 mg/l

Toxicity to bacteria

EC50, 30 Hour, Respiration rates., > 100 mg/l

Chronic toxicity to fish

Based on data from similar materials

NOEC, Fish, 34 d, > 10 mg/l

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOEC, Daphnia magna, 21 d, > 10 mg/l

N,N'-Distearoylethylene diamine

Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms. No toxicity at the limit of solubility LC50, 96 Hour, > 0.027 mg/l

Acute toxicity to aquatic invertebrates

No toxicity at the limit of solubility EC50, Daphnia magna (Water flea), 48 Hour, > 0.002 mg/l

Acute toxicity to algae/aquatic plants

No toxicity at the limit of solubility EC50, 72 Hour, > 0.053 mg/l

Toxicity to bacteria

3 Hour, > 1,000 mg/l, OECD Test Guideline 209

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, > 10 mg/l

ALUMINUM PHOSPHATE SOLUTION

Acute toxicity to fish

For similar material(s):

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna, Static, 48 Hour, > 100 mg/l, OECD Test Guideline 202

Toxicity to bacteria

EC50, 3 Hour, > 1,000 mg/l, OECD Test Guideline 209

Lubricating oils, petroleum, hydrotreated spent

Acute toxicity to fish

Based on data from similar materials

LL50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 100 mg/l, Test substance: Water Accommodated Fraction

Acute toxicity to aquatic invertebrates

Based on data from similar materials

EL50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, Test substance: Water Accommodated Fraction

Chronic toxicity to aquatic invertebrates

Based on data from similar materials

NOELR, Daphnia magna (Water flea), 21 d, 1,000 mg/l, Test substance: Water Accommodated Fraction

Fumed silica (generic)

Acute toxicity to fish

Based on information for a similar material:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). For similar material(s):

LC50, Danio rerio (zebra fish), 96 Hour, > 100 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

For similar material(s):

EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, Method Not Specified.

Persistence and degradability

Distillates, petroleum, solvent-dewaxed light paraffinic

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Issue Date: 07/05/2021

10-day Window: Fail **Biodegradation:** 2 - 4 % **Exposure time:** 28 d

Method: OECD Test Guideline 301B

Molybdenum disulfide

Biodegradability: Biodegradability is not applicable to inorganic substances.

N,N'-Distearoylethylene diamine

Biodegradability: Inherently biodegradable.

10-day Window: Fail **Biodegradation:** 15 % **Exposure time:** 28 d

ALUMINUM PHOSPHATE SOLUTION

Biodegradability: No relevant data found.

Fumed silica (generic)

Biodegradability: Biodegradation is not applicable.

Bioaccumulative potential

Distillates, petroleum, solvent-dewaxed light paraffinic

Bioaccumulation: No relevant data found.

Molybdenum disulfide

Bioaccumulation: Partitioning from water to n-octanol is not applicable.

N,N'-Distearoylethylene diamine

Bioaccumulation: Bioconcentration potential is low (BCF less than 100 or log Pow greater than 7).

Partition coefficient: n-octanol/water(log Pow): 13.98 Bioconcentration factor (BCF): < 6.2 Cyprinus carpio (Carp)

ALUMINUM PHOSPHATE SOLUTION

Bioaccumulation: No relevant data found.

Fumed silica (generic)

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Bioaccumulation: No relevant data found.

Mobility in soil

Distillates, petroleum, solvent-dewaxed light paraffinic

No relevant data found.

Molybdenum disulfide

No relevant data found.

N,N'-Distearoylethylene diamine

Expected to be relatively immobile in soil (Koc > 5000). **Partition coefficient (Koc):** 814704284.020839

ALUMINUM PHOSPHATE SOLUTION

No relevant data found.

Fumed silica (generic)

Expected to be relatively immobile in soil (Koc > 5000).

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section10 Regulatory Information, MSDS Section 15

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

14. TRANSPORT INFORMATION

DOT

Proper shipping name Environmentally hazardous substance, solid, n.o.s.(Zinc

pyrophosphate, N-Tallow Alkyltrimethylenediamine Oleate)

UN number UN 3077

Class 9
Packing group III

Marine pollutant Zinc pyrophosphate, N-Tallow Alkyltrimethylenediamine

Oleate

Classification for SEA transport (IMO-IMDG):

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.(Zinc pyrophosphate, N-Tallow

Alkyltrimethylenediamine Oleate)

UN number UN 3077

Class 9
Packing group III

Marine pollutant Zinc pyrophosphate, N-Tallow Alkyltrimethylenediamine

Oleate

Transport in bulk Consult IMO regulations before transporting ocean bulk

according to Annex I or II of MARPOL 73/78 and the

IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

Proper shipping name Environmentally hazardous substance, solid, n.o.s.(Zinc

pyrophosphate, N-Tallow Alkyltrimethylenediamine Oleate)

Issue Date: 07/05/2021

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

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

ComponentsCASRNZinc pyrophosphate7446-26-6

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

Calculated RQ exceeds reasonably attainable upper limit.

ComponentsCASRNRQ (RCRA Code)Ethylene glycol107-21-15000 lbs RQ

Pennsylvania Right To Know

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	CASRN
Distillates, petroleum, solvent-dewaxed light paraffinic	64742-56-9
Molybdenum disulfide	1317-33-5
Zinc pyrophosphate	7446-26-6
Hydroxylapatite	1306-06-5
N,N'-Distearoylethylene diamine	110-30-5
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5

California Prop. 65

WARNING: This product can expose you to chemicals including Ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System

NFPA

	Health	Flammability	Instability
	0	1	0
H	MIS		
			Physical

Health	Flammability	Physical Hazard
0/	1	0

Revision

Identification Number: 2076675 / A776 / Issue Date: 07/05/2021 / Version: 9.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

USA. ACGIH Threshold Limit Values (TLV)
California permissible exposure limits for chemical contaminants (Title 8, Article
107)
USA. NIOSH Recommended Exposure Limits
USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
Contaminants
USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
Permissible exposure limit
STEL - 15-minute TWA exposure that should not be exceeded at any time during
a workday
8-hour time weighted average

Full text of other abbreviations

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AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials: bw - Body weight: CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada): ECx - Concentration associated with x% response: EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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: MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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; RCRA -Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA -Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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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