# SAFETY DATA SHEET

**DDP SPECIALTY PRODUCTS GERMANY GMBH & CO. KG**

**Product name: MOLYKOTE® P-3700 Antiseize Paste** **Issue Date:** 04/08/2022

**Print Date:** 07/04/2022

DDP SPECIALTY PRODUCTS GERMANY GMBH & CO. KG 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® P-3700 Antiseize Paste
**Recommended use of the chemical and restrictions on use**
**Identified uses:** Lubricants and lubricant additives

**COMPANY IDENTIFICATION**
DDP SPECIALTY PRODUCTS GERMANY
GMBH & CO. KG
AUGUST-WOLFF-STR. 13
29699 WALSRODE
GERMANY

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

**EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** +(49)- 69643508409
**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:** Lubricants and lubricant additives
This product is a mixture.

| Component | CASRN | Concentration |
|---|---|---|

| | | |
|---|---|---|
| White mineral oil (petroleum) | 8042-47-5 | >= 40.0 - < 50.0 % |
| Graphite | 7782-42-5 | >= 20.0 - < 30.0 % |
| ALUMINUM PHOSPHATE SOLUTION | 7784-30-7 | >= 5.0 - < 15.0 % |
| Zirconium oxide | 1314-23-4 | >= 5.0 - < 15.0 % |
| Silicon dioxide | 7631-86-9 | >= 1.0 - < 10.0 % |

## 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:** Carbon oxides Oxides of phosphorus Metal oxides Nitrogen oxides (NOx) Boron oxides Silicon oxides

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

**Advice for firefighters**
**Fire Fighting Procedures:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. 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:** Discharge into the environment must be avoided. 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.

**Advice on general occupational hygiene**
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.

**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 |
|---|---|---|---|
| White mineral oil (petroleum) | OSHA P0 | TWA | 5 mg/m3 |
| | OSHA Z-1 | TWA Mist | 5 mg/m3 |
| | ACGIH | TWA Inhalable particulate matter | 5 mg/m3 |
| | Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen | | |
| | CAL PEL | PEL particulate | 5 mg/m3 |
| | Further information: (l): As sampled by method that does not collect vapor. | | |
| | OSHA P0 | TWA Mist | 5 mg/m3 |
| Graphite | OSHA Z-1 | | See Further information |
| | Further information: (3): See table Z-3 | | |
| | OSHA Z-3 | TWA Dust | 15 Million particles per cubic foot |
| | 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-1 | TWA total dust | 15 mg/m3 |
| | OSHA Z-1 | TWA respirable fraction | 5 mg/m3 |
| | ACGIH | TWA Respirable particulate matter | 2 mg/m3 |
| | Further information: pneumoconiosis: Pneumoconiosis | | |
| | CAL PEL | PEL Total dust | 10 mg/m3 |
| | CAL PEL | PEL respirable dust fraction | 5 mg/m3 |
| | Further information: (n): The concentration and percentage of the particulate used for this limit are determined from the fraction passing a size selector with the following characteristics: Aerodynamic Diameter in Micrometers (unit density sphere)..... Percent Passing Selector 0 ..... 100<br>1 ..... 97 2 ..... 91<br>3 ..... 74 4 ..... 50<br>5 ..... 30 6 ..... 17<br>7 ..... 9 8 ..... 5<br>10 ..... 1 | | |
| | CAL PEL | PEL Respirable dust | 2.5 mg/m3 |
| | NIOSH REL | TWA Respirable | 2.5 mg/m3 |
| | Further information: Also see specific listing for Graphite (synthetic). | | |
| | OSHA P0 | TWA Total dust | 10 mg/m3 |
| | OSHA P0 | TWA respirable dust fraction | 5 mg/m3 |
| | OSHA P0 | TWA respirable dust fraction | 2.5 mg/m3 |
| ALUMINUM PHOSPHATE SOLUTION | ACGIH | TWA Respirable particulate matter | 1 mg/m3 , Aluminium |
| | Further information: LRT irr: Lower Respiratory Tract irritation; pneumoconiosis: Pneumoconiosis; neurotoxicity: Neurotoxicity; A4: Not classifiable as a human carcinogen; varies: varies | | |
| Zirconium oxide | OSHA Z-1 | TWA | 5 mg/m3 , Zirconium |
| | ACGIH | TWA | 5 mg/m3 , Zirconium |

| | | | |
|---|---|---|---|
| | Further information: resp irr: Respiratory irritation; A4: Not classifiable as a human carcinogen | | |
| | ACGIH | STEL | 10 mg/m3 , Zirconium |
| | Further information: resp irr: Respiratory irritation; A4: Not classifiable as a human carcinogen | | |
| | CAL PEL | PEL | 5 mg/m3 , Zirconium |
| | CAL PEL | STEL | 10 mg/m3 , Zirconium |
| Silicon dioxide | 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 |
| | NIOSH REL | TWA | 6 mg/m3 , Silica |
| | CAL PEL | PEL | 6 mg/m3 |
| | NIOSH REL | TWA Respirable dust | 0.05 mg/m3 , Silica |
| | Further information: Ca: Potential Occupational Carcinogen; See Appendix A | | |

**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** | none |
| **Odor Threshold** | No data available |
| **pH** | No data available |

| | |
|---|---|
| **Melting point/range** | No data available |
| **Freezing point** | No data available |
| **Boiling point (760 mmHg)** | No data available |
| **Flash point** | No data available |
| **Evaporation Rate (Butyl Acetate = 1)** | No data available |
| **Flammability (solid, gas)** | Not expected to form explosive dust-air mixtures. Not classified as a flammability hazard |
| **Lower explosion limit** | No data available |
| **Upper explosion limit** | No data available |
| **Vapor Pressure** | No data available |
| **Relative Vapor Density (air = 1)** | No data available |
| **Relative Density (water = 1)** | 1.23 |
| **Water solubility** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Auto-ignition temperature** | No data available |
| **Decomposition temperature** | No data available |
| **Kinematic Viscosity** | No data available |
| **Explosive properties** | No data available |
| **Oxidizing properties** | The substance or mixture is not classified as oxidizing. |
| **Molecular weight** | 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:** 1-Butene.

## 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.

**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:**

**White mineral oil (petroleum)**

**Acute oral toxicity**
LD50, Rat, > 5,000 mg/kg OECD Test Guideline 401

**Acute dermal toxicity**
LD50, Rabbit, > 2,000 mg/kg OECD Test Guideline 402 No deaths occurred at this concentration.

**Acute inhalation toxicity**

Mist may cause severe irritation of the upper respiratory tract (nose and throat) and lungs. Vapors are unlikely due to physical properties. Excessive exposure to mineral oil mist may cause lung injury (lipoid pneumonia). Excessive exposure may cause: Incoordination.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5 mg/l OECD Test Guideline 403

**Skin corrosion/irritation**
Prolonged contact is essentially nonirritating to skin.
Repeated contact may cause skin irritation with local redness.

**Serious eye damage/eye irritation**
May cause slight eye irritation.
May cause slight temporary corneal injury.

**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)**
In animals, effects have been reported on the following organs after ingestion:
Liver.
Lymph nodes.
Excessive repeated exposure to mineral oil mist may produce lung injury.

**Carcinogenicity**
Did not cause cancer in laboratory animals.

**Teratogenicity**
Did not cause birth defects in laboratory animals.

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

**Mutagenicity**
In vitro genetic toxicity studies were negative.

**Aspiration Hazard**
May be fatal if swallowed and enters airways.

**Graphite**

**Acute oral toxicity**
LD50, Rat, > 2,000 mg/kg OECD Test Guideline 401 No deaths occurred at this concentration.

**Acute dermal toxicity**
The dermal LD50 has not been determined.

**Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, > 2 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

**Skin corrosion/irritation**
Essentially nonirritating to skin.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.
May cause slight temporary corneal injury.

**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)**
Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs.

**Carcinogenicity**
No relevant data found.

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

**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.

**Zirconium oxide**

**Acute oral toxicity**
LD50, Rat, female, > 5,000 mg/kg

**Acute dermal toxicity**
The dermal LD50 has not been determined.

**Acute inhalation toxicity**
LC50, Rat, male and female, 4 Hour, dust/mist, > 4.3 mg/l The LC50 value is greater than the Maximum Attainable Concentration.

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.
Prolonged contact may cause skin irritation with local redness.

**Serious eye damage/eye irritation**
May cause slight eye irritation.
May cause slight corneal injury.

**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 significant adverse effects.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
In vitro genetic toxicity studies were negative.

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

**Silicon dioxide**

**Acute oral toxicity**
LD50, Rat, > 3,300 mg/kg No deaths occurred at this concentration.

**Acute dermal toxicity**
LD50, Rabbit, > 5,000 mg/kg

**Acute inhalation toxicity**
LC50, Rat, 4 Hour, dust/mist, > 2.08 mg/l No deaths occurred at this concentration.

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

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

**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**

**White mineral oil (petroleum)**

**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).
LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, > 10,000 mg/l
LL50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203
LL50, Leuciscus idus (Golden orfe), static test, 96 Hour, > 10,000 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
LL50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202

**Graphite**

**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).
LC50, Danio rerio (zebra fish), 96 Hour, > 100 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, > 100 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201

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

**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

**Zirconium oxide**

**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).
LL50, Fish, static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia (water flea), static test, 48 Hour, > 100 mg/l

**Acute toxicity to algae/aquatic plants**
EC50, Algae (Scenedesmus subspicatus), static test, 72 Hour, Growth inhibition, > 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**
No data available

**Silicon dioxide**

**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).
LC50, Danio rerio (zebra fish), 96 Hour, > 10,000 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, > 1,000 mg/l, OECD Test Guideline 202

**Persistence and degradability**

**White mineral oil (petroleum)**

**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. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).
10-day Window: Fail
**Biodegradation:** 0 - 24 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 3.50 mg/mg

**Photodegradation**
**Test Type:** Half-life (indirect photolysis)
**Sensitization:** OH radicals
**Atmospheric half-life:** 1.291 d
**Method:** Estimated.

**Graphite**
**Biodegradability:** Biodegradation is not applicable.

**ALUMINUM PHOSPHATE SOLUTION**
**Biodegradability:** No relevant data found.

**Zirconium oxide**
**Biodegradability:** No relevant data found.

**Silicon dioxide**
**Biodegradability:** Biodegradability is not applicable to inorganic substances.

**Bioaccumulative potential**

**White mineral oil (petroleum)**
**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
**Partition coefficient: n-octanol/water(log Pow):** 5.18 Measured
**Bioconcentration factor (BCF):** 1,900 Fish

**Graphite**
**Bioaccumulation:** No relevant data found.

**ALUMINUM PHOSPHATE SOLUTION**
**Bioaccumulation:** No relevant data found.

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

**Silicon dioxide**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 0.53
**Bioconcentration factor (BCF):** 3.16

**Mobility in soil**

**White mineral oil (petroleum)**
Potential for mobility in soil is low (Koc between 500 and 2000).
**Partition coefficient (Koc):** 510 Estimated.

**Graphite**
No relevant data found.

**ALUMINUM PHOSPHATE SOLUTION**
No relevant data found.

**Zirconium oxide**

No relevant data found.

**Silicon dioxide**

Potential for mobility in soil is very high (Koc between 0 and 50).
**Partition coefficient (Koc):** 21.73

## 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**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

| | |
|---|---|
| **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):**

Not regulated for transport

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**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Prop. 65**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**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 |

**HMIS**

| Health | Flammability | Physical Hazard |
|---|---|---|
| 0/ | 1 | 0 |

**Revision**
Identification Number: 12085252 / A812 / Issue Date: 04/08/2022 / Version: 1.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

| | |
|---|---|
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| CAL PEL | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| NIOSH REL | USA. NIOSH Recommended Exposure Limits |
| OSHA P0 | USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values) |

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| OSHA Z-1 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| OSHA Z-3 | USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts |
| PEL | Permissible exposure limit |
| STEL | Short-term exposure limit |
| TWA | 8-hour time weighted average |

**Full text of other abbreviations**
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; 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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