SAFETY DATA SHEET

High Temperature Anti-Seize Compound

Section 1. Identification

GHS product identifier : High Temperature Anti-Seize Compound

Product code : 301526150025

Other means of identification : Not available.

Product type : Liquid.

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

Identified uses
grease Lubricating agent

Uses advised against
Not applicable.

Supplier's details : Calumet Branded Products, LLC
1060 N Capitol Ave Suite 6-401
Indianapolis, IN 46204
USA
Technical Services:317-328-5660

Emergency telephone number (with hours of operation) : 24 hr. CHEMTREC 1-800-424-9300 / International 1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7%

GHS label elements

Hazard pictograms :



Signal word : No signal word.

Hazard statements : Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Avoid release to the environment.

Response : Collect spillage.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 2. Hazards identification

Hazards identified when used : No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

Ingredient name	Synonyms	%	Identifiers
Distillates (petroleum), hydrotreated heavy naphthenic	Baseoil - unspecified; Distillates, petroleum, hydrotreated heavy naphthenic; Hydrotreated heavy naphthenic distillate, solvent extract, petroleum; Mineral oil, petroleum distillates, hydrotreated heavy naphthenic; Mineral oil, petroleum distillates, hydrotreated (severe) heavy naphthenic; Distillates (petroleum), hydro-treated heavy naphthenic; Hydrotreated heavy naphthenic distillate solvent extract (petroleum); OILS, MINERAL, HEAVY NAPHTHENIC, HYDROTREATED; OILS, NAPHTHENIC, HYDROGENATED; SEVERELY SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES; HYDROTREATED LIGHT PETROLEUM DISTILLATE	≥15 - ≤40	CAS: 64742-52-5
copper	copper flakes; Copper, powder; Copper Fume (as Cu); Copper Dust and mists (as Cu); COPPER DUSTS AND MISTS; Copper metal fumes; Copper metal dusts; Copper, fume; Copper , dusts & mists; Copper concentrate; Copper metal	≥15 - ≤40	CAS: 7440-50-8
Natural graphite	Graphite, natural, respirable dust; Graphite (Natural); GRAPHITE NATURAL; Stove black; Silver graphite; Plumbago; Mineral carbon; Black lead; Graphite - All forms except graphite fibres	≥7 - ≤13	CAS: 7782-42-5
zinc oxide	CI 77947; Zinc oxide fume; Zinc peroxide; Zinc, oxide Fume; ZINC OXIDE (ZNO); FLOWERS OF ZINC; zinc oxide, nanoparticles, uncoated; zinc oxide, nanoparticles, coated with [3-(methacryloxy)propyl] trimethoxysilane; C.I. Pigment White 4; Zinc monoxide; Zinc white	≥5 - ≤10	CAS: 1314-13-2
Residual oils (petroleum), solvent-dewaxed	Baseoil - unspecified; Residual oils, petroleum, solvent, dewaxed;	≥3 - ≤7	CAS: 64742-62-7

Section 3. Composition/information on ingredients

	Residual oils, petroleum, solvent-dewaxed; Residual oils (petroleum) solvent dewaxed; OILS, PETROLEUM, RESIDUAL, SOLVENT DEWAXED; RESIDUAL OIL (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC; RESIDUAL OIL (PETROLEUM), SOLVENT-DEWAXED; OILS, RESIDUAL, SOLVENT-DEWAXED; SOLVENT-DEWAXED RESIDUAL OIL; Residual oils (petroleum), solvent-dewaxed, Baseoil - unspecified; Residual oils (petroleum), solvent dewaxed		
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Baseoil - unspecified; Distillates, petroleum, solvent dewaxed heavy paraffinic; Mineral oil, petroleum distillates, solvent-dewaxed heavy paraffinic; Paraffin oil; Distillates, petroleum, solvent-dewaxed heavy paraffinic; Distillate (Pet.) solvent-dewaxed heavy paraffinic; SOLVENT REFINED PARAFFINIC MINERAL OIL; OILS, PARAFFINIC, HEAVY, SOLVENT DEWAXED; Solvent dewaxed heavy paraffinic petroleum oil; PARAFFINIC PETROLEUM DISTILLATES; Distillates (petroleum), solvent-dewaxed heavy paraffinic, Baseoil - unspecified	≥3 - ≤7	CAS: 64742-65-0
Distillates (petroleum), hydrotreated heavy paraffinic	Baseoil - unspecified; Distillates, petroleum, hydrotreated heavy paraffinic; Mineral oil, petroleum distillates, hydrotreated heavy paraffinic; Distillates (petroleum), hydro-treated heavy paraffinic; Paraffin oil; HYDROTREATED HEAVY PARAFFINIC DISTILLATE; DISTILLATES (PETROLEUM) HYDROFVLD; Distillates (petroleum), hydrotreated heavy paraffinic, Baseoil - unspecified	≥3 - ≤7	CAS: 64742-54-7
Fatty acids, tallow, hydrogenated, reaction products with aluminum isopropoxide and benzoic acid	Fatty acids, tallow, hydrogenated, reaction products with aluminium isopropoxide and benzoic acid; Fatty acids, tallow, hydrogenated, aluminium hydroxy, benzoate complex salt; Fatty acids, tallow, hydrogenated reaction products with aluminum isopropoxide and benzoic acid	≥3 - ≤7	CAS: 68201-44-5
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	Butene, homopolymer; Polybutene; polybutenes; butene homopolymer; Butene; Polymer	≥1 - ≤5	CAS: 9003-29-6

Section 3. Composition/information on ingredients

	of butene; Polybutylene; POLYBUTENE POLYMER		
White mineral oil (petroleum)	White mineral oil, petroleum; White spirits; Mineral oil; Paraffin oil; WHITE MINERAL OIL; Paraffinum liquidum; mineral oils (lubricant, base oils, and derived products) (general: 8002-05-9) (untreated vacuum distillates; acid-treated oils; aromatic oils; mildly solvent-refined oils; mildly hydro-treated oils; used gasoline-engine oil; and mineral oils used in mulespinning, metal machining, and jute processing); OILS, WHITE MINERAL, PETROLEUM; petroleum mineral oil; LIGHT MINERAL OIL	≥0.5 - ≤1.5	CAS: 8042-47-5
crystalline silica, non-respirable	alpha-quartz; Silica, crystalline (quartz); Silica, Crystalline Quartz; SILICA, CRYSTALLINE, QUARTZ; Silica-Crystalline, Quartz; Silica - Crystalline Quartz; Silica-Crystalline : Quartz; Silica, crystalline - quartz	≥0.5 - ≤1.5	CAS: 14808-60-7
Lubricating oils (petroleum), hydrotreated spent	Lubricating oils, petroleum, hydrotreated spent; OILS, LUBRICATING, (PETROLEUM), HYDROTREATED SPENT; Lubricating Olis (petroleum), Hydrotreated Spent; Lubricating oils (petroleum), hydrotreated, used; SEVERELY HYDROTREATED SPENT LUBE OIL	≥0.5 - ≤1.5	CAS: 64742-58-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Section 4. First aid measures

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy naphthenic	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2025) [Mineral Oil, pure, highly and severely refined]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
copper	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 1 mg/m³ (as Cu). Form: Dusts and Mists. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.1 mg/m³ (as Cu). **OSHA PEL (United States, 5/2018)** TWA 8 hours: 0.1 mg/m³. Form: Fume. TWA 8 hours: 1 mg/m³. Form: Dusts and Mists. **OSHA PEL 1989 (United States, 3/1989)**

Section 8. Exposure controls/personal protection

	[Copper Fume (as Cu)] TWA 8 hours: 0.1 mg/m³ (as Cu). Form: Fume. **OSHA PEL 1989 (United States, 3/1989) [Copper Dust and mists (as Cu)]** TWA 8 hours: 1 mg/m³ (as Cu). Form: Dusts and Mists. **ACGIH TLV (United States, 1/2025) [copper dusts and mists]** TWA 8 hours: 1 mg/m³ (as Cu). Form: Dust and mist. **ACGIH TLV (United States, 1/2025) [copper fume]** TWA 8 hours: 0.2 mg/m³. Form: Fume.
Natural graphite	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 2.5 mg/m³. Form: Respirable fraction. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 2.5 mg/m³. Form: respirable dust. **OSHA PEL Z3 (United States, 6/2016)** TWA 8 hours: 15 mppcf. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 15 mg/m³. Form: Total dust. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. **OSHA PEL 1989 (United States, 3/1989)** TWA 8 hours: 2.5 mg/m³. Form: Respirable dust. **ACGIH TLV (United States, 1/2025)** TWA 8 hours: 2 mg/m³. Form: Respirable fraction.
zinc oxide	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 5 mg/m³. Form: Dust and fumes. STEL 15 minutes: 10 mg/m³. Form: Fume. CEIL: 15 mg/m³. Form: Dust. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 5 mg/m³. Form: respirable fraction. TWA 8 hours: 10 mg/m³. Form: total dust. STEL 15 minutes: 10 mg/m³. Form: fumes. TWA 8 hours: 5 mg/m³. Form: fumes. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 15 mg/m³. Form: Total dust. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. TWA 8 hours: 5 mg/m³. Form: Fume. **OSHA PEL 1989 (United States, 3/1989) [Zinc oxide fume]** TWA 8 hours: 5 mg/m³. Form: Fume. STEL 15 minutes: 10 mg/m³. Form: Fume. **OSHA PEL 1989 (United States, 3/1989) [Zinc oxide]** TWA 8 hours: 10 mg/m³. Form: Total dust. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. **ACGIH TLV (United States, 1/2025)** TWA 8 hours: 2 mg/m³. Form: Respirable fraction. STEL 15 minutes: 10 mg/m³. Form: Respirable fraction.

Section 8. Exposure controls/personal protection

Residual oils (petroleum), solvent-dewaxed	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2025) [Mineral Oil, pure, highly and severely refined]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Distillates (petroleum), solvent-dewaxed heavy paraffinic	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2025) [Mineral Oil, pure, highly and severely refined]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Distillates (petroleum), hydrotreated heavy paraffinic	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2025) [Mineral Oil, pure, highly and severely refined]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
Fatty acids, tallow, hydrogenated, reaction products with aluminum isopropoxide and benzoic acid	**NIOSH REL (United States, 10/2020) [aluminum soluble salts and alkyls]** TWA 10 hours: 2 mg/m³ (as Al). **CAL OSHA PEL (United States, 1/2025) [aluminum soluble salts]** TWA 8 hours: 2 mg/m³. **OSHA PEL 1989 (United States, 3/1989) [Aluminum (as Al) Metal, Soluble salts]** TWA 8 hours: 2 mg/m³ (as Al).
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	None.
White mineral oil (petroleum)	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2025) [Mineral Oil, pure, highly and severely refined]** A4. TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
crystalline silica, non-respirable	**CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.05 mg/m³. **OSHA PEL Z3 (United States, 6/2016)** TWA 8 hours: 30 / (%SiO_2+2) mg/m³. Form: Total dust.

Section 8. Exposure controls/personal protection

Lubricating oils (petroleum), hydrotreated spent	**OSHA PEL (United States, 5/2018) [Silica, crystalline]** TWA 8 hours: 50 µg/m³. Form: Respirable dust. **ACGIH TLV (United States)** TWA 8 hours: 5 mg/m³ (Inhalable Mist).

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Brownish-red.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Section 9. Physical and chemical properties

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Closed cup: 188°C (370.4°F) [Pensky-Martens]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Butene, homopolymer (products derived from either/or But-1-ene/ But-2-ene)	5.10043	0.68		13.05111	1.7	

Relative vapor density : Not available.

Relative density : 1.49

Solubility(ies) :

Media	Result
cold water	Not soluble
hot water	Not soluble

Solubility in water : Not available.

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

Auto-ignition temperature : 260°C (500°F)

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): Not applicable.

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

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

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
Distillates (petroleum), hydrotreated heavy naphthenic	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 5.7 mg/l [4 hours]
copper	**Rat - Oral - LD50** 300 to 2500 mg/kg **Rat - Dermal - LD50** 2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 5.11 mg/l [4 hours]
Natural graphite	**Rat - Oral - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Vapor** >2000 mg/m³ [4 hours]
zinc oxide	**Rat - Dermal - LD50** 2000 mg/kg **Rat - Oral - LD50** 2000 to 5000 mg/kg **Rat - Inhalation - LC50 Vapor** 1.79 to 5.7 mg/l [4 hours]
Residual oils (petroleum), solvent-dewaxed	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >5.53 mg/l [4 hours]
Distillates (petroleum), solvent-dewaxed heavy paraffinic	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >5.53 mg/l [4 hours]
Distillates (petroleum), hydrotreated heavy paraffinic	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 5.7 mg/l [4 hours]
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	**Rat - Oral - LD50** >34600 mg/kg **Rabbit - Dermal - LD50** >10250 mg/kg
White mineral oil (petroleum)	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >2000 mg/kg **Rat - Inhalation - LC50 Dusts and mists** >5 mg/l [4 hours]
Lubricating oils (petroleum), hydrotreated spent	**Rat - Oral - LD50** >5000 mg/kg **Rabbit - Dermal - LD50** >5000 mg/kg

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Ingredient name	Conclusion/Summary
Natural graphite	No known significant effects or critical hazards. Inhalation exposure is considered to be not relevant.

Skin corrosion/irritation

Product/ingredient name	Result
Zinc oxide	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
crystalline silica, non-respirable	+	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	ASPIRATION HAZARD - Category 1
White mineral oil (petroleum)	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
High Temperature Anti-Seize Compound	N/A	20828.9	N/A	N/A	N/A
Distillates (petroleum), hydrotreated heavy naphthenic	N/A	2500	N/A	N/A	5.7
copper	N/A	N/A	N/A	N/A	5.11
Natural graphite	2500	N/A	N/A	N/A	N/A
zinc oxide	2500	2000	N/A	N/A	N/A
Residual oils (petroleum), solvent-dewaxed	N/A	2500	N/A	N/A	N/A
Distillates (petroleum), solvent-dewaxed heavy paraffinic	N/A	2500	N/A	N/A	N/A
Distillates (petroleum), hydrotreated heavy paraffinic	N/A	2500	N/A	N/A	5.7
White mineral oil (petroleum)	N/A	2500	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result
Distillates (petroleum), hydrotreated heavy naphthenic	**Acute - LC50** Fish >100 mg/l [96 hours] **Acute - EC50** Crustaceans >100 mg/l [48 hours] **Acute - EC50** Algae >100 mg/l [72 hours]
copper	**Acute - LC50 - Fresh water** Fish - Fathead minnow - *Pimephales promelas* - Juvenile (Fledgling, Hatchling, Weanling) Age: <1 months 10.3 µg/l [96 hours] Effect: Mortality **Chronic - NOEC - Marine water** Algae - Diatom - *Nitzschia closterium* - Exponential growth phase 2.5 µg/l [72 hours] Effect: Population **Chronic - NOEC - Fresh water** Fish - Nile tilapia - *Oreochromis niloticus* - Juvenile (Fledgling, Hatchling, Weanling) Weight: 8.3 g 0.8 µg/l [6 weeks] Effect: Biochemistry **Chronic - NOEC - Fresh water** Daphnia - Water flea - *Daphnia magna* 2 µg/l [21 days] Effect: Mortality **Acute - EC50 - Fresh water** Crustaceans - Water flea - *Ceriodaphnia pulchella* - Juvenile (Fledgling, Hatchling, Weanling) Age: <48 hours 1.7 µg/l [48 hours] Effect: Intoxication **Acute - IC50 - Fresh water** Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase

Section 12. Ecological information

	13 µg/l [72 hours] Effect: Population
Natural graphite	**Acute - LC50** Fish >100 mg/l [96 hours] **Acute - NOEC** Fish >100 mg/l [96 hours]
zinc oxide	**Acute - LC50 - Fresh water** US EPA Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* Weight: 0.78 g 1.1 ppm [96 hours] Effect: Mortality **Acute - EC50 - Fresh water** OECD Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 0.481 mg/l [48 hours] Effect: Intoxication **Acute - IC50 - Fresh water** Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 46 µg/l [72 hours] Effect: Population
Residual oils (petroleum), solvent-dewaxed	**Acute - LC50** Fish >100 mg/l [96 hours] **Acute - EC50** Crustaceans >100 mg/l [48 hours] **Acute - EC50** Algae >100 mg/l [72 hours]
Distillates (petroleum), solvent-dewaxed heavy paraffinic	**Acute - LC50** Fish >100 mg/l [96 hours] **Acute - EC50** Daphnia >100 mg/l [48 hours] **Acute - EC50** Algae >100 mg/l [72 hours] **Chronic - NOEL** Daphnia >1 mg/l [21 days]
Distillates (petroleum), hydrotreated heavy paraffinic	**Acute - IC50** Algae >100 mg/l [72 hours] **Acute - EC50** Daphnia >100 mg/l [48 hours] **Acute - LC50** Fish >100 mg/l [96 hours]
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	**Acute - EC50** Daphnia >1000 mg/l [48 hours] **Acute - LC50** Fish

Section 12. Ecological information

White mineral oil (petroleum)	>1000 mg/l [96 hours] **Acute - LC50** Fish >10000 mg/l [96 hours] **Acute - LC50** Daphnia >100 mg/l [48 hours]

Conclusion/Summary [Product] : Not available.

Ingredient name	Conclusion/Summary
Natural graphite	No known significant effects or critical hazards.

Persistence and degradability

Not available.

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated heavy naphthenic	-	-	Inherent
Residual oils (petroleum), solvent-dewaxed	-	-	Inherent
Distillates (petroleum), hydrotreated heavy paraffinic	-	-	Not readily
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	-	-	Not readily
White mineral oil (petroleum)	-	-	Inherent

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Zinc oxide	-	28960	High
Residual oils (petroleum), solvent-dewaxed	>6	-	High
Distillates (petroleum), solvent-dewaxed heavy paraffinic	2 to 6	-	High
Distillates (petroleum), hydrotreated heavy paraffinic	>6	-	High
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	7.6 to 7.8	314 to 1882	High
White mineral oil (petroleum)	>6	-	High

Mobility in soil

Soil/Water partition coefficient : Not available.

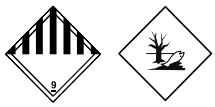
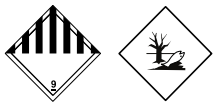
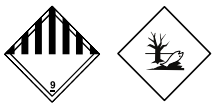
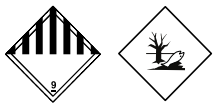
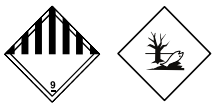
Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (copper, zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper, zinc oxide)	SUBSTANCIA LÍQUIDA PELIGROSA PARA EL MEDIO AMBIENTE, N.E. P. (copper, zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper, zinc oxide)	Environmentally hazardous substance, liquid, n.o.s. (copper, zinc oxide)
Transport hazard class(es)	9 	9 	9 	9 	9 
Packing group	III	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.	Yes.

Additional information

DOT Classification : Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.
Reportable quantity 16666.7 lbs / 7566.7 kg [1341.5 gal / 5078.3 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 155. Non-bulk: 203. Bulk: 241.
Special provisions 8, 146, 173, 335, IB3, T4, TP1, TP29

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99

Mexico Classification : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Special provisions 274, 331, 335

Section 14. Transport information

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 969

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158, A197, A215

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
Clean Water Act (CWA) 307: copper; zinc oxide

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Classification
Zinc oxide	≥5 - ≤10	ACUTE TOXICITY (dermal) - Category 4
Butene, homopolymer (products derived from either/or But-1-ene/ But-2-ene)	≥1 - ≤5	ASPIRATION HAZARD - Category 1
White mineral oil (petroleum)	≥0.5 - ≤1.5	ASPIRATION HAZARD - Category 1

SARA 313

Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	copper zinc oxide	7440-50-8 1314-13-2	≥15 - ≤40 ≥5 - ≤10
Supplier notification	copper zinc oxide	7440-50-8 1314-13-2	≥15 - ≤40 ≥5 - ≤10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: COPPER; GRAPHITE (NATURAL)DUST; ZINC OXIDE FUME; OIL MIST, MINERAL; OIL MIST, MINERAL; SILICA, CRYSTALLINE, QUARTZ

New York : The following components are listed: Copper

New Jersey : The following components are listed: COPPER; GRAPHITE (NATURAL); ZINC OXIDE; SILICA, QUARTZ

Pennsylvania : The following components are listed: COPPER FUME; GRAPHITE; ZINC OXIDE FUME; QUARTZ DUST

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : All components are listed or exempted.

Canada : At least one component is not listed in DSL but all such components are listed in NDSL.

China : All components are listed or exempted.

Eurasian Economic Union : **Russian Federation inventory**: Not determined.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : At least one component is not listed.

Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : At least one component is not listed.

Thailand : Not determined.

Turkey : Not determined.

United States : Not determined.

Viet Nam : Not determined.

Section 16. Other information

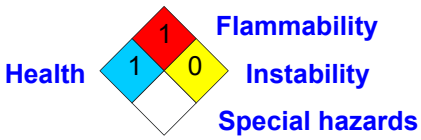
Hazardous Material Information System (U.S.A.)

Health	/	0
Flammability		1
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
AQUATIC HAZARD (ACUTE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method Calculation method

History

Date of printing : 1/23/2026

Date of issue/Date of revision : 1/23/2026

Date of previous issue : 9/17/2025

Version : 8

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
DOT = Department of Transportation
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
TDG = Transportation of Dangerous Goods
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.