



SAFETY DATA SHEET

According to the Hazard Communication Standard, 29 CFR 1910.1200

MULTIS COMPLEX HV 2 MOLY

SDS # : 089267

Section 1. Identification

GHS product identifier : MULTIS COMPLEX HV 2 MOLY

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

Identified uses

Lithium Grease

Supplier's details : TotalEnergies Marketing USA, Inc.
1201 Louisiana St. Suite 1800
Houston, TX 77002
Phone: 713-483-5000
ProductSafety@totalenergies.com

Emergency telephone number (with hours of operation) :

1-866-928-0789 (For Emergencies, call CARECHEM 24/7 Domestic)
1-215-207-0061 (For Emergencies, call CARECHEM 24/7 International)

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 : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
calcium carbonate	≤5	471-34-1
dilithium azelate	≤3	38900-29-7
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	<3	68457-79-4

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

Additional information : Mineral oil of petroleum origin. Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment 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. Get medical attention if symptoms occur.
- Skin contact** : ☒ Wash skin thoroughly with soap and water or use recognized skin cleanser. 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. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : ☒ No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : ☒ No specific data.
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
- 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 dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : ☒ carbon monoxide
carbon dioxide
nitrogen oxides
phosphorus oxides
sulfur oxides
Hydrogen sulfide
Mercaptans
Zinc 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).

Methods and materials for containment and cleaning up

Small spill : ☒ Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : ☒ Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Pregnant women should strictly avoid inhalation or skin contact. Put on appropriate personal protective equipment (see Section 8).
- 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
calcium carbonate	NIOSH REL (United States, 10/2020). [calcium carbonate] TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total
dilithium azelate	CAL OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ 8 hours. Form: respirable fraction TWA: 10 mg/m ³ 8 hours. Form: total dust
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	None. None.

Biological exposure indices

No exposure indices known.

- Advisory OEL** : Mineral oil mist: USA: OSHA (PEL) TWA 5 mg/m³, NIOSH (REL) TWA 5 mg/m³, STEL 10 mg/m³, ACGIH (TLV) TWA 5 mg/m³ (highly refined)

- 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.
Hydrocarbon-proof gloves
Fluorinated rubber
nitrile rubber
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- 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.
- Respiratory protection** : ☒ None under normal use conditions. If these are not sufficient to maintain exposure below the OEL, suitable respiratory protection must be worn.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated


Appearance


- Physical state** : Solid.
- Color** : Gray.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point** : Not available.
- Flash point** : Open cup: Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not applicable.
- Vapor pressure** : Not available.
- Vapor density** : Not applicable.
- Relative density** : 0.92 [ASTM D 4052]
- Density** : 0.92 g/cm³ [20°C]
- Solubility(ies)** :

Media	Result
water	Not soluble

Miscible with water	: No.
Solubility in water	: Insoluble
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (40°C (104°F)): Not applicable.
Flow time (ISO 2431)	: Not available.
Particle characteristics	
Median particle size	: Not available.

Section 10. Stability and reactivity


Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: Stable under recommended storage and handling conditions (see Section 7).
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	:  Strong oxidizing agents

Hazardous decomposition products	:  Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/substance	Result	Species	Dose	Exposure	Test
 Calcium carbonate	LD50 Dermal	Rat	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat	6450 mg/kg	-	-
dilithium azelate	LD50 Dermal	Rat	>2000 mg/kg	-	-
	LD50 Oral	Rat	301 mg/kg	-	-
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	LD50 Dermal	Rabbit	>20 g/kg	-	OECD 402
	LD50 Oral	Rat	3.6 g/kg	-	Acute Dermal Toxicity
					-

Conclusion/Summary	: Based on available data, the classification criteria are not met.
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Irritation/Corrosion

Product/substance	Result	Species	Score	Exposure	Test
calcium carbonate	Eyes - Severe irritant	Rabbit	-	24 hours 750 ug	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Skin	: Based on available data, the classification criteria are not met.
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Eyes	:  Based on available data, the classification criteria are not met.
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Respiratory	: Based on available data, the classification criteria are not met.
<u>Sensitization</u>	
Skin	: Based on available data, the classification criteria are not met.
Respiratory	: Based on available data, the classification criteria are not met.
<u>Mutagenicity</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Carcinogenicity</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Reproductive toxicity</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Teratogenicity</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Specific target organ toxicity (single exposure)</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Specific target organ toxicity (repeated exposure)</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.
<u>Aspiration hazard</u>	
Conclusion/Summary	: Based on available data, the classification criteria are not met.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Defatting to the skin. May cause skin dryness and irritation.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: <input checked="" type="checkbox"/> No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation dryness cracking
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.

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.

Numerical measures of toxicity

Acute toxicity estimates

Product/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
MULTIS COMPLEX HV 2 MOLY	8983.4	N/A	N/A	N/A	N/A
calcium carbonate	6450	N/A	N/A	N/A	N/A
dilithium azelate	301	N/A	N/A	N/A	N/A
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	3600	N/A	N/A	N/A	N/A

Other information

:
Not available.

Section 12. Ecological information

Toxicity

Product/substance	Result	Species	Exposure	Test
calcium carbonate	Acute EC10 >14 mg/l	Algae - <i>Desmodesmus subspicatus</i>	72 hours	OECD 201
	Acute EC50 >14 mg/l	Algae - <i>Desmodesmus subspicatus</i>	72 hours	OECD 201
	Acute LC50 >56000 ppm Fresh water	Fish - <i>Gambusia affinis</i> - Adult	96 hours	-
	Chronic NOEC 16.5 mg/l Fresh water	Fish - <i>Rhamdia quelen</i>	30 days	-
dilithium azelate	Acute LC50 >100 mg/l	Algae	72 hours	-
	Acute LC50 >100 mg/l	Daphnia	48 hours	-
	Acute EL50 23 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours	OECD 202
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	Acute LC50 21 mg/l Fresh water	Algae - <i>Scenedesmus subspicatus</i>	72 hours	OECD 201
	Acute LC50 46 mg/l Marine water	Fish - <i>Cyprinodon variegatus</i>	96 hours	OECD 203
	Acute LL50 4.5 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours	OECD 203
	Acute NOEC 0.8 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days	OECD 211

Persistence and degradability

Product/substance	Aquatic half-life	Photolysis	Biodegradability
calcium carbonate	-	-	Readily
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	-	-	Not readily

Bioaccumulative potential

Product/substance	LogK _{ow}	BCF	Potential
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	0.69	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility in soil : Given its physical and chemical characteristics, the product has no soil mobility. The product is insoluble and floats on water. Loss by evaporation is limited.

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. 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	IMDG	ICAO/IATA
UN/ID No	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information

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 4(a) proposed test rules: (tetrapropenyl)succinic acid
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts

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

Clean Air Act Section 602 : Not listed
Class I Substances

Clean Air Act Section 602 : Not listed
Class II Substances

DEA List I Chemicals : Not listed
(Precursor Chemicals)

DEA List II Chemicals : Not listed
(Essential Chemicals)

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
calcium carbonate	≤5	SKIN IRRITATION - Category 2
dilithium azelate	≤3	ACUTE TOXICITY (oral) - Category 4
Phosphorodithioic acid, mixed O, O-bis(iso-Bu and pentyl) esters, zinc salts	<3	SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	<3
Supplier notification	Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	<3

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: OIL MIST, MINERAL; OIL MIST, MINERAL; OIL MIST, MINERAL; MOLYBDENUM DISULFIDE

New York : None of the components are listed.

New Jersey : The following components are listed: ZINC compounds

Pennsylvania : The following components are listed: ZINC COMPOUNDS

California Prop. 65

To the best of our knowledge, this product does not contain any substances known to the State of California to cause cancer, developmental and/or reproductive harm

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 inventory (AIIC)

: All components are listed or exempted.

Canada inventory (DSL/NDSL)

: All components are listed or exempted.

China inventory (IECSC)

: All components are listed or exempted.

Europe inventory (EC)

: All components are listed or exempted.

Japan inventory

: **Japan inventory (CSCL)**: All components are listed or exempted.

Japan inventory (ISHL): Not determined.

New Zealand Inventory of Chemicals (NZIoC)

: ☒ All components are listed or exempted.

Philippines inventory (PICCS)

: All components are listed or exempted.

Korea inventory (KECI)

: All components are listed or exempted.

Taiwan Chemical Substances Inventory (TCSI)

: All components are listed or exempted.

Thailand inventory

: Not determined.

Turkey inventory

: Not determined.

United States inventory (TSCA 8b)

: All components are listed or exempted.

Vietnam inventory

: Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

Section 16. Other information

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

Health	/ 0
Flammability	0
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.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of revision : 2024/05/17

previous revision date : 2023/04/26

Version : 4

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- 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
- UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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.