

## 2003 LONG-LIFE GREASE+MOS2 100g

Liqui Moly GmbH

Chemwatch: 16-81817

Version No: 3.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 1

Issue Date: 30/01/2019

Print Date: 31/01/2019

S.GHS.USA.EN

### SECTION 1 IDENTIFICATION

#### Product Identifier

|                               |                                 |
|-------------------------------|---------------------------------|
| Product name                  | 2003 LONG-LIFE GREASE+MOS2 100g |
| Synonyms                      | Not Available                   |
| Other means of identification | Not Available                   |

#### Recommended use of the chemical and restrictions on use

|                          |                                             |
|--------------------------|---------------------------------------------|
| Relevant identified uses | Use according to manufacturer's directions. |
|--------------------------|---------------------------------------------|

#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

|                         |                                            |
|-------------------------|--------------------------------------------|
| Registered company name | Liqui Moly GmbH                            |
| Address                 | Jerg-Wieland-Strasse 4 Ulm D-89081 Germany |
| Telephone               | +49 731 1420 0                             |
| Fax                     | +49 731 1420 82                            |
| Website                 | Not Available                              |
| Email                   | Not Available                              |

#### Emergency phone number

|                                   |                                      |
|-----------------------------------|--------------------------------------|
| Association / Organisation        | INFOTRAC                             |
| Emergency telephone numbers       | +1800 535 5053 (US, Canada & Mexico) |
| Other emergency telephone numbers | +1 352 323 3500 (International)      |

### SECTION 2 HAZARD(S) IDENTIFICATION

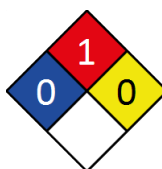
#### Classification of the substance or mixture

##### CHEMWATCH HAZARD RATINGS

|              | Min | Max |
|--------------|-----|-----|
| Flammability | 1   | 1   |
| Toxicity     | 0   | 0   |
| Body Contact | 0   | 0   |
| Reactivity   | 1   | 1   |
| Chronic      | 0   | 0   |

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

##### NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

|                |                |
|----------------|----------------|
| Classification | Not Applicable |
|----------------|----------------|

#### Label elements

|                     |                |
|---------------------|----------------|
| Hazard pictogram(s) | Not Applicable |
|---------------------|----------------|

|             |                |
|-------------|----------------|
| SIGNAL WORD | NOT APPLICABLE |
|-------------|----------------|

#### Hazard statement(s)

Not Applicable

#### Hazard(s) not otherwise classified

Not Applicable

#### Precautionary statement(s) Prevention

Not Applicable

Continued...

## 2003 LONG-LIFE GREASE+MOS2 100g

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No        | %[weight] | Name                                       |
|---------------|-----------|--------------------------------------------|
| 7782-42-5     | NotSpec   | <u>graphite</u>                            |
| 471-34-1      | NotSpec   | <u>calcium carbonate</u>                   |
| Not Available |           | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 FIRST-AID MEASURES****Description of first aid measures**

|                     |                                                                                                                                                                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>  | If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| <b>Skin Contact</b> | If skin or hair contact occurs: <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>                                                                                         |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>                                                                                                           |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>                                                                                                 |

**Most important symptoms and effects, both acute and delayed**

See Section 11

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 FIRE-FIGHTING MEASURES****Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

**Special hazards arising from the substrate or mixture**

|                             |                                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Incompatibility</b> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

**Special protective equipment and precautions for fire-fighters**

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> </ul> Combustion products include:<br>carbon monoxide (CO)<br>carbon dioxide (CO2)<br>nitrogen oxides (NOx)<br>sulfur oxides (SOx)<br>other pyrolysis products typical of burning organic material. |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

|              |                                                                                                                                                                                                                                                                                                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minor Spills | <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Wear impervious gloves and safety glasses.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> </ul>                                                                                                     |
| Major Spills | <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment and dust respirator.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> </ul> |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling     | <ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> </ul> |
| Other information | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

### Conditions for safe storage, including any incompatibilities

|                         |                                                                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container      | <ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> </ul> |
| Storage incompatibility | Avoid contamination of water, foodstuffs, feed or seed. <ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>                                                   |

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

| Source                                                | Ingredient        | Material name                                                                                                                          | TWA                        | STEL          | Peak          | Notes                      |
|-------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------|---------------|----------------------------|
| US NIOSH Recommended Exposure Limits (RELs)           | graphite          | Black lead, Mineral carbon, Plumbago, Silver graphite, Stove black [Note: Also see specific listing for Graphite (synthetic).]         | 2.5 (resp) mg/m3           | Not Available | Not Available | Not Available              |
| US OSHA Permissible Exposure Levels (PELs) - Table Z3 | graphite          | Graphite                                                                                                                               | 15 mppcf                   | Not Available | Not Available | (Name ((Natural)))         |
| US ACGIH Threshold Limit Values (TLV)                 | graphite          | Graphite (all forms except graphite fibers)                                                                                            | 2 mg/m3                    | Not Available | Not Available | TLV® Basis: Pneumoconiosis |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | graphite          | Graphite, natural, respirable dust                                                                                                     | Not Available              | Not Available | Not Available | See Table Z-3              |
| US NIOSH Recommended Exposure Limits (RELs)           | calcium carbonate | Calcium carbonate, Natural calcium carbonate [Note: Calcite & aragonite are commercially important natural calcium carbonates.]        | 10 (total), 5 (resp) mg/m3 | Not Available | Not Available | Not Available              |
| US NIOSH Recommended Exposure Limits (RELs)           | calcium carbonate | Calcium carbonate, Natural calcium carbonate [Note: Marble is a metamorphic form of calcium carbonate.]                                | 10 (total), 5 (resp) mg/m3 | Not Available | Not Available | Not Available              |
| US NIOSH Recommended Exposure Limits (RELs)           | calcium carbonate | Calcium salt of carbonic acid [Note: Occurs in nature as as limestone, chalk, marble, dolomite, aragonite, calcite and oyster shells.] | 10 (total), 5 (resp) mg/m3 | Not Available | Not Available | Not Available              |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Calcium carbonate: Total dust                                                                                                          | 15 mg/m3                   | Not Available | Not Available | Not Available              |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Limestone: Total dust                                                                                                                  | 15 mg/m3                   | Not Available | Not Available | Not Available              |

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|                                                       |                   |                                |          |               |               |               |
|-------------------------------------------------------|-------------------|--------------------------------|----------|---------------|---------------|---------------|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Marble: Total dust             | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Marble: Respirable fraction    | 5 mg/m3  | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Limestone: Respirable fraction | 5 mg/m3  | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium carbonate | Respirable fraction            | 5 mg/m3  | Not Available | Not Available | Not Available |

## EMERGENCY LIMITS

| Ingredient        | Material name                            | TEEL-1   | TEEL-2    | TEEL-3      |
|-------------------|------------------------------------------|----------|-----------|-------------|
| graphite          | Graphite; (Mineral carbon)               | 6 mg/m3  | 16 mg/m3  | 95 mg/m3    |
| calcium carbonate | Limestone; (Calcium carbonate; Dolomite) | 45 mg/m3 | 500 mg/m3 | 3,000 mg/m3 |
| calcium carbonate | Carbonic acid, calcium salt              | 45 mg/m3 | 210 mg/m3 | 1,300 mg/m3 |

| Ingredient        | Original IDLH | Revised IDLH  |
|-------------------|---------------|---------------|
| graphite          | 1,250 mg/m3   | Not Available |
| calcium carbonate | Not Available | Not Available |

## Exposure controls

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>                                                                                                                                                                                                                              |
| Personal protection              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Eye and face protection          | <ul style="list-style-type: none"> <li>Safety glasses with side shields</li> <li>Chemical goggles.</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                        |
| Skin protection                  | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Hands/feet protection            | <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>polychloroprene.</li> <li>nitrile rubber.</li> <li>butyl rubber.</li> </ul> |
| Body protection                  | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Other protection                 | <p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>Overalls.</li> <li>Barrier cream.</li> <li>Eyewash unit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | P1<br>Air-line*      | -                    | PAPR-P1                |
| up to 50 x ES                      | Air-line**           | P2                   | PAPR-P2                |
| up to 100 x ES                     | -                    | P3                   | -                      |
|                                    |                      | Air-line*            | -                      |
| 100+ x ES                          | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor

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- ▶ recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

|                                              |                                                                            |                                         |                |
|----------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------|----------------|
| Appearance                                   | Black paste like solid with characteristic odour; not miscible with water. |                                         |                |
| Physical state                               | Solid                                                                      | Relative density (Water = 1)            | <1             |
| Odour                                        | Not Available                                                              | Partition coefficient n-octanol / water | Not Available  |
| Odour threshold                              | Not Available                                                              | Auto-ignition temperature (°C)          | Not Available  |
| pH (as supplied)                             | Not Applicable                                                             | Decomposition temperature               | Not Available  |
| Melting point / freezing point (°C)          | Not Available                                                              | Viscosity (cSt)                         | >20.5          |
| Initial boiling point and boiling range (°C) | Not Available                                                              | Molecular weight (g/mol)                | Not Applicable |
| Flash point (°C)                             | >150                                                                       | Taste                                   | Not Available  |
| Evaporation rate                             | Not Available                                                              | Explosive properties                    | Not Available  |
| Flammability                                 | Not Applicable                                                             | Oxidising properties                    | Not Available  |
| Upper Explosive Limit (%)                    | Not Available                                                              | Surface Tension (dyn/cm or mN/m)        | Not Applicable |
| Lower Explosive Limit (%)                    | Not Available                                                              | Volatile Component (%vol)               | 0              |
| Vapour pressure (kPa)                        | Not Available                                                              | Gas group                               | Not Available  |
| Solubility in water                          | Immiscible                                                                 | pH as a solution (1%)                   | Not Available  |
| Vapour density (Air = 1)                     | Not Available                                                              | VOC g/L                                 | Not Available  |

## SECTION 10 STABILITY AND REACTIVITY

|                                    |                                                                           |
|------------------------------------|---------------------------------------------------------------------------|
| Reactivity                         | See section 7                                                             |
| Chemical stability                 | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7                                                             |
| Conditions to avoid                | See section 7                                                             |
| Incompatible materials             | See section 7                                                             |
| Hazardous decomposition products   | See section 5                                                             |

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

|              |                                                                                                                                                                                                                                                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhaled      | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| Ingestion    | The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.                                                                                                                    |
| Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.             |
| Eye          | Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.                                                  |
| Chronic      | Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.                                                                            |

|                                 |                                                                                                 |                                                                          |
|---------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 2003 LONG-LIFE GREASE+MOS2 100g | TOXICITY                                                                                        | IRRITATION                                                               |
|                                 | Not Available                                                                                   | Not Available                                                            |
| graphite                        | TOXICITY                                                                                        | IRRITATION                                                               |
|                                 | Inhalation (rat) LC50: >2 mg/l4 h <sup>[1]</sup><br>Oral (rat) LD50: >2000 mg/kg <sup>[2]</sup> | Not Available                                                            |
| calcium carbonate               | TOXICITY                                                                                        | IRRITATION                                                               |
|                                 | dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup><br>Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>    | Eye (rabbit): 0.75 mg/24h - SEVERE<br>Skin (rabbit): 500 mg/24h-moderate |

## 2003 LONG-LIFE GREASE+MOS2 100g

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---|
| <b>GRAPHITE</b>                          | No significant acute toxicological data identified in literature search.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |   |
| <b>CALCIUM CARBONATE</b>                 | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.<br>No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.                                                                                                                                                                                                                                                                                                                  |                                 |   |
| <b>GRAPHITE &amp; CALCIUM CARBONATE</b>  | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. |                                 |   |
| <b>Acute Toxicity</b>                    | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Carcinogenicity</b>          | ✗ |
| <b>Skin Irritation/Corrosion</b>         | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Reproductivity</b>           | ✗ |
| <b>Serious Eye Damage/Irritation</b>     | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>STOT - Single Exposure</b>   | ✗ |
| <b>Respiratory or Skin sensitisation</b> | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>STOT - Repeated Exposure</b> | ✗ |
| <b>Mutagenicity</b>                      | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Aspiration Hazard</b>        | ✗ |

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

| 2003 LONG-LIFE GREASE+MOS2 100g | ENDPOINT      | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|---------------------------------|---------------|--------------------|-------------------------------|---------------|---------------|
|                                 | Not Available | Not Available      | Not Available                 | Not Available | Not Available |
| graphite                        | ENDPOINT      | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|                                 | LC50          | 96                 | Fish                          | >100mg/L      | 2             |
|                                 | EC50          | 48                 | Crustacea                     | >100mg/L      | 2             |
|                                 | EC50          | 72                 | Algae or other aquatic plants | >100mg/L      | 2             |
|                                 | NOEC          | 72                 | Algae or other aquatic plants | >=100mg/L     | 2             |
| calcium carbonate               | ENDPOINT      | TEST DURATION (HR) | SPECIES                       | VALUE         | SOURCE        |
|                                 | LC50          | 96                 | Fish                          | >56000mg/L    | 4             |
|                                 | EC50          | 72                 | Algae or other aquatic plants | >14mg/L       | 2             |
|                                 | EC10          | 72                 | Algae or other aquatic plants | >14mg/L       | 2             |
|                                 | NOEC          | 72                 | Algae or other aquatic plants | 14mg/L        | 2             |

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

## Persistence and degradability

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

## Bioaccumulative potential

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

## Mobility in soil

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

| Product / Packaging disposal |                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | <ul style="list-style-type: none"> <li>Recycle wherever possible.</li> <li>Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> </ul> |

Continued...

## 2003 LONG-LIFE GREASE+MOS2 100g

- ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## SECTION 14 TRANSPORT INFORMATION

## Labels Required

|                  |                      |
|------------------|----------------------|
| Marine Pollutant | NO<br>Not Applicable |
|------------------|----------------------|

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

## Safety, health and environmental regulations / legislation specific for the substance or mixture

## GRAPHITE(7782-42-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

|                                                                                               |                                                                                  |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| US - Alaska Limits for Air Contaminants                                                       | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants                         | US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts              |
| US - Hawaii Air Contaminant Limits                                                            | US ACGIH Threshold Limit Values (Spanish)                                        |
| US - Idaho - Limits for Air Contaminants                                                      | US ACGIH Threshold Limit Values (TLV)                                            |
| US - Massachusetts - Right To Know Listed Chemicals                                           | US DOE Temporary Emergency Exposure Limits (TEELs)                               |
| US - Michigan Exposure Limits for Air Contaminants                                            | US NIOSH Recommended Exposure Limits (RELs)                                      |
| US - Minnesota Permissible Exposure Limits (PELs)                                             | US NIOSH Recommended Exposure Limits (RELs) (Spanish)                            |
| US - Oregon Permissible Exposure Limits (Z-1)                                                 | US OSHA Permissible Exposure Levels (PELs) - Table Z1                            |
| US - Oregon Permissible Exposure Limits (Z-3)                                                 | US OSHA Permissible Exposure Levels (PELs) - Table Z3                            |
| US - Pennsylvania - Hazardous Substance List                                                  | US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)              |
| US - Rhode Island Hazardous Substance List                                                    | US OSHA Permissible Exposure Limits - Annotated Table Z-3 (Spanish)              |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants                     | US Technical Guide 230 - Air Military Exposure Guidelines                        |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants   | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory            |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | US TSCA Chemical Substance Inventory - Interim List of Active Substances         |
| US - Washington Permissible exposure limits of air contaminants                               |                                                                                  |

## CALCIUM CARBONATE(471-34-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

|                                                                                             |                                                                                               |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Acros Transport Information                                                                 | US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants                     |
| GESAMP/EHS Composite List - GESAMP Hazard Profiles                                          | US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants   |
| IMO IBC Code Chapter 18: List of products to which the Code does not apply                  | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - Alaska Limits for Air Contaminants                                                     | US - Washington Permissible exposure limits of air contaminants                               |
| US - Colorado Medication Take-Back - Program Listing of Non-acceptable Substances           | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants              |
| US - Hawaii Air Contaminant Limits                                                          | US ACGIH Threshold Limit Values (Spanish)                                                     |
| US - Idaho - Limits for Air Contaminants                                                    | US DOE Temporary Emergency Exposure Limits (TEELs)                                            |
| US - Idaho Toxic Air Pollutants Non- Carcinogenic Increments - Occupational Exposure Limits | US NIOSH Recommended Exposure Limits (RELs)                                                   |
| US - Massachusetts - Right To Know Listed Chemicals                                         | US NIOSH Recommended Exposure Limits (RELs) (Spanish)                                         |
| US - Michigan Exposure Limits for Air Contaminants                                          | US OSHA Permissible Exposure Levels (PELs) - Table Z1                                         |
| US - Minnesota Permissible Exposure Limits (PELs)                                           | US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)                           |
| US - Oregon Permissible Exposure Limits (Z-1)                                               | US Technical Guide 230 - Air Military Exposure Guidelines                                     |
| US - Pennsylvania - Hazardous Substance List                                                | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory                         |
| US - Rhode Island Hazardous Substance List                                                  | US TSCA Chemical Substance Inventory - Interim List of Active Substances                      |

## Federal Regulations

## Superfund Amendments and Reauthorization Act of 1986 (SARA)

## SECTION 311/312 HAZARD CATEGORIES

|                                                 |    |
|-------------------------------------------------|----|
| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
| Gas under pressure                              | No |
| Explosive                                       | No |
| Self-heating                                    | No |
| Pyrophoric (Liquid or Solid)                    | No |
| Pyrophoric Gas                                  | No |
| Corrosive to metal                              | No |
| Oxidizer (Liquid, Solid or Gas)                 | No |
| Organic Peroxide                                | No |
| Self-reactive                                   | No |

Continued...

## 2003 LONG-LIFE GREASE+MOS2 100g

|                                                              |    |
|--------------------------------------------------------------|----|
| In contact with water emits flammable gas                    | No |
| Combustible Dust                                             | No |
| Carcinogenicity                                              | No |
| Acute toxicity (any route of exposure)                       | No |
| Reproductive toxicity                                        | No |
| Skin Corrosion or Irritation                                 | No |
| Respiratory or Skin Sensitization                            | No |
| Serious eye damage or eye irritation                         | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard                                            | No |
| Germ cell mutagenicity                                       | No |
| Simple Asphyxiant                                            | No |

## US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

## State Regulations

## US. CALIFORNIA PROPOSITION 65

None Reported

## National Inventory Status

| National Inventory            | Status                                                                                                                                                                                      |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AICS              | Yes                                                                                                                                                                                         |
| Canada - DSL                  | Yes                                                                                                                                                                                         |
| Canada - NDSL                 | No (graphite)                                                                                                                                                                               |
| China - IECSC                 | Yes                                                                                                                                                                                         |
| Europe - EINEC / ELINCS / NLP | Yes                                                                                                                                                                                         |
| Japan - ENCS                  | No (graphite)                                                                                                                                                                               |
| Korea - KECI                  | Yes                                                                                                                                                                                         |
| New Zealand - NZIoC           | Yes                                                                                                                                                                                         |
| Philippines - PICCS           | Yes                                                                                                                                                                                         |
| USA - TSCA                    | Yes                                                                                                                                                                                         |
| <b>Legend:</b>                | Yes = All ingredients are on the inventory<br>No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

## SECTION 16 OTHER INFORMATION

|               |            |
|---------------|------------|
| Revision Date | 30/01/2019 |
| Initial Date  | 29/01/2019 |

## SDS Version Summary

| Version | Issue Date | Sections Updated |
|---------|------------|------------------|
| 3.1.1.1 | 30/01/2019 | Name             |

## Other information

## Ingredients with multiple cas numbers

| Name              | CAS No                                                                                                                  |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| calcium carbonate | 471-34-1, 13397-26-7, 15634-14-7, 1317-65-3, 72608-12-9, 878759-26-3, 63660-97-9, 459411-10-0, 198352-33-9, 146358-95-4 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC — TWA: Permissible Concentration-Time Weighted Average  
 PC — STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value

Continued...

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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