

awdllozfnl-p6EVE

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
 Date of first issue: 03/25/2015

SECTION 1. IDENTIFICATION

Product name : Special Lubricant DARDA

Product code : 00000000002209942

Manufacturer or supplier's details

Company name of supplier : DARDA GmbH

Address : IM Tal 1
 DE-78176 Blumberg / Germany

Telephone : +49 7702 4391 0

Recommended use of the chemical and restrictions on use

Recommended use : Lubricants and lubricant additives

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Inorganic and organic compounds
 Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Calcium hydroxide	1305-62-0	>= 30 - < 50
White mineral oil (petroleum)	8042-47-5	>= 20 - < 30
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	>= 5 - < 10
Distillates (petroleum), solvent refined heavy naphthenic	64741-96-4	>= 1 - < 5
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	>= 1 - < 5
Paraffin waxes and Hydrocarbon waxes	8002-74-2	>= 1 - < 5
12-Hydroxy lithium stearate	7620-77-1	>= 1 - < 5

Special Lubricant DARDA

Version 1.3	Revision Date: 10/02/2015	SDS Number: 1711459-00004	Date of last issue: 09/09/2015 Date of first issue: 03/25/2015
----------------	------------------------------	------------------------------	---

SECTION 4. FIRST AID MEASURES

- | | |
|---|---|
| If inhaled | : If inhaled, remove to fresh air.
Get medical attention if symptoms occur. |
| In case of skin contact | : Wash with water and soap as a precaution.
Get medical attention if symptoms occur. |
| In case of eye contact | : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists. |
| If swallowed | : If swallowed, DO NOT induce vomiting.
Get medical attention if symptoms occur.
Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : None known. |
| Protection of first-aiders | : No special precautions are necessary for first aid responders. |
| Notes to physician | : Treat symptomatically and supportively. |
-

SECTION 5. FIRE-FIGHTING MEASURES

- | | |
|--|---|
| Suitable extinguishing media | : Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : None known. |
| Specific hazards during fire fighting | : Exposure to combustion products may be a hazard to health. |
| Hazardous combustion products | : Metal oxides
Carbon oxides
Oxides of phosphorus |
| Specific extinguishing methods | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area. |
| Special protective equipment for fire-fighters | : Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment. |

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers. Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Calcium hydroxide	1305-62-0	TWA	5 mg/m ³	ACGIH
		TWA (total)	15 mg/m ³	OSHA Z-1

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
 Date of first issue: 03/25/2015

		dust)		
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA	5 mg/m3	NIOSH REL
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
Distillates (petroleum), solvent refined heavy naphthenic	64741-96-4	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
Paraffin waxes and Hydrocarbon waxes	8002-74-2	TWA (Fumes)	2 mg/m3	ACGIH
		TWA (Fumes)	2 mg/m3	NIOSH REL
12-Hydroxy lithium stearate	7620-77-1	TWA	10 mg/m3	ACGIH

Engineering measures : Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations. Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m3 - respirable particles, 10 mg/m3 - inhalable particles.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any

Special Lubricant DARDA

Version 1.3	Revision Date: 10/02/2015	SDS Number: 1711459-00004	Date of last issue: 09/09/2015 Date of first issue: 03/25/2015
----------------	------------------------------	------------------------------	---

hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : Wash hands before breaks and at the end of workday.

Eye protection

: Wear the following personal protective equipment:
Safety glasses

Skin and body protection

: Skin should be washed after contact.

Hygiene measures

: Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: paste
Color	: white
Odor	: none
Odor Threshold	: No data available
pH	: Not applicable
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: Not applicable
Flash point	: 160 °C Method: closed cup
Evaporation rate	: Not applicable
Flammability (solid, gas)	: Not classified as a flammability hazard
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: Not applicable
Relative vapor density	: No data available

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Relative density : 1.1

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : Not applicable

Explosive properties : Not explosive

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

Molecular weight : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 425
Assessment: The substance or mixture has no acute oral toxicity

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Acute dermal toxicity : LD50 (Rabbit): > 2,500 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

White mineral oil (petroleum):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Distillates (petroleum), hydrotreated heavy naphthenic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 420

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

12-Hydroxy lithium stearate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Species: Rabbit
Result: No skin irritation
Remarks: Based on test data

Ingredients:**Calcium hydroxide:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

White mineral oil (petroleum):

Species: Rabbit
Result: No skin irritation

Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

12-Hydroxy lithium stearate:

Species: Rabbit
Result: No skin irritation
Remarks: Based on data from similar materials

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species: Rabbit
Result: No eye irritation
Remarks: Based on test data

Ingredients:**Calcium hydroxide:**

Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

White mineral oil (petroleum):

Species: Rabbit
Result: No eye irritation

Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Paraffin waxes and Hydrocarbon waxes:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

12-Hydroxy lithium stearate:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.
Respiratory sensitization: Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Distillates (petroleum), hydrotreated heavy naphthenic:

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Test Type: Buehler Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

12-Hydroxy lithium stearate:

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Method: OECD Test Guideline 429

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

White mineral oil (petroleum):

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), hydrotreated heavy naphthenic:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Species: Rat
Application Route: Ingestion
Exposure time: 104 weeks
Result: negative
Remarks: Based on data from similar materials

White mineral oil (petroleum):

Species: Rat
Application Route: Ingestion
Exposure time: 24 Months
Result: negative

Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Mouse
Application Route: Skin contact
Exposure time: 78 weeks
Method: OECD Test Guideline 451
Result: negative

Distillates (petroleum), solvent refined heavy naphthenic:

Species: Mouse
Application Route: Skin contact
Exposure time: 78 weeks
Method: OECD Test Guideline 451
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Species: Mouse
 Application Route: Skin contact
 Exposure time: 78 weeks
 Method: OECD Test Guideline 451
 Result: negative

Paraffin waxes and Hydrocarbon waxes:

Species: Rat
 Application Route: Ingestion
 Exposure time: 2 Years
 Result: negative

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: Ingestion
 Result: negative
 Remarks: Based on data from similar materials

White mineral oil (petroleum):

Effects on fertility : Test Type: One-generation reproduction toxicity study
 Species: Rat
 Application Route: Skin contact
 Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: Ingestion
 Result: negative

Distillates (petroleum), hydrotreated heavy naphthenic:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Result: negative
 Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Species: Rat
Application Route: Skin contact
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Skin contact
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Skin contact
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Skin contact
Result: negative

STOT-single exposure

Not classified based on available information.

Ingredients:**Calcium hydroxide:**

Assessment: May cause respiratory irritation.

Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

STOT-repeated exposure

Not classified based on available information.

Ingredients:**12-Hydroxy lithium stearate:**

Routes of exposure: Ingestion

Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity**Ingredients:****White mineral oil (petroleum):**

Species: Rat

LOAEL: > 160 mg/kg

Application Route: Ingestion

Exposure time: 90 Days

Species: Rat

LOAEL: >= 1 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 4 Weeks

Method: OECD Test Guideline 412

Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Rat

NOAEL: > 0.98 mg/l

Application Route: inhalation (dust/mist/fume)

Exposure time: 28 Days

Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Species: Rabbit

NOAEL: 1,000 mg/kg

Application Route: Skin contact

Exposure time: 4 Weeks

Method: OECD Test Guideline 410

Remarks: Based on data from similar materials

Species: Rat

NOAEL: > 980 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 4 Weeks

Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Species: Rabbit

NOAEL: 1,000 mg/kg

Application Route: Skin contact

Exposure time: 4 Weeks

Method: OECD Test Guideline 410

Remarks: Based on data from similar materials

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Species: Rat
 NOAEL: > 980 mg/m³
 Application Route: inhalation (dust/mist/fume)
 Exposure time: 4 Weeks
 Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Species: Rat
 NOAEL: > 2,000 mg/kg
 Application Route: Skin contact
 Exposure time: 13 Weeks
 Method: OECD Test Guideline 411

12-Hydroxy lithium stearate:

Species: Rat
 NOAEL: > 88 mg/kg
 Application Route: Ingestion
 Exposure time: 90 Days

Aspiration toxicity

Not classified based on available information.

Ingredients:**White mineral oil (petroleum):**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Distillates (petroleum), hydrotreated heavy naphthenic:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****Calcium hydroxide:**

Toxicity to fish	:	LC50 (Gasterosteus aculeatus (threespine stickleback)): 457 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 49.1 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	EC10 (Pseudokirchneriella subcapitata (green algae)): 79.22 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
 Date of first issue: 03/25/2015

- EC50 (Pseudokirchneriella subcapitata (green algae)): 184.57 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 32 mg/l
 Exposure time: 14 d
- Toxicity to bacteria : EC50: 300.4 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209
- White mineral oil (petroleum):**
- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
 Exposure time: 48 h
 Method: OECD Test Guideline 202
- Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l
 Exposure time: 28 d
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,000 mg/l
 Exposure time: 21 d
- Distillates (petroleum), hydrotreated heavy naphthenic:**
- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
 Exposure time: 48 h
 Remarks: Based on data from similar materials
- Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
 Exposure time: 21 d
 Remarks: Based on data from similar materials

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
Date of first issue: 03/25/2015

Toxicity to bacteria : NOEC: > 1.93 mg/l
Exposure time: 10 min
Remarks: Based on data from similar materials

Distillates (petroleum), solvent refined heavy naphthenic:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Toxicity to bacteria : NOEC: > 1.93 mg/l
Exposure time: 10 min
Method: DIN 38 412 Part 8
Remarks: Based on data from similar materials

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Toxicity to bacteria : NOEC: > 1.93 mg/l
Exposure time: 10 min

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Method: DIN 38 412 Part 8
Remarks: Based on data from similar materials

Paraffin waxes and Hydrocarbon waxes:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l
Exposure time: 21 d

12-Hydroxy lithium stearate:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : NOELR (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Persistence and degradability**Ingredients:****White mineral oil (petroleum):**

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 31 %
Exposure time: 28 d

Distillates (petroleum), hydrotreated heavy naphthenic:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 2 - 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Distillates (petroleum), solvent refined heavy naphthenic:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 2 - 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Distillates (petroleum), solvent-dewaxed heavy paraffinic:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 2 - 8 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Paraffin waxes and Hydrocarbon waxes:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 31 %
Exposure time: 28 d

12-Hydroxy lithium stearate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 78 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Bioaccumulative potential**Ingredients:****Paraffin waxes and Hydrocarbon waxes:**

Partition coefficient: n- : log Pow: 5.3 - 6.7
octanol/water

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Resource Conservation and Recovery Act (RCRA) : This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION**International Regulation****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

US State Regulations**Pennsylvania Right To Know**

Calcium hydroxide	1305-62-0	30 - 50 %
White mineral oil (petroleum)	8042-47-5	20 - 30 %
Polybutene	9003-29-6	10 - 20 %
Tricalcium Phosphate, Hydrated	1306-06-5	5 - 10 %
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	5 - 10 %
Distillates (petroleum), solvent refined heavy naphthenic	64741-96-4	1 - 5 %
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0	1 - 5 %
Paraffin waxes and Hydrocarbon waxes	8002-74-2	1 - 5 %

New Jersey Right To Know

Calcium hydroxide	1305-62-0	30 - 50 %
White mineral oil (petroleum)	8042-47-5	20 - 30 %
Polybutene	9003-29-6	10 - 20 %
Tricalcium Phosphate, Hydrated	1306-06-5	5 - 10 %
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	5 - 10 %
Paraffin waxes and Hydrocarbon waxes	8002-74-2	1 - 5 %

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other repro-

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

ductive defects.

The ingredients of this product are reported in the following inventories:

- KECI : All ingredients listed, exempt or notified.
- TCSI : All ingredients listed or exempt.
- REACH : All ingredients (pre-)registered or exempt.
- AICS : All ingredients listed or exempt.
- IECSC : All ingredients listed or exempt.
- ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.
- PICCS : All ingredients listed or exempt.
- DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).
- TSCA : Clearance for manufacture, import, processing, or use of this product under the United States Toxic Substances Control Act (TSCA) is based on a low volume exemption (LVE) from the Inventory listing requirements of TSCA (40 CFR 723.50(c) (1)).
- NZIoC : All ingredients listed or exempt.

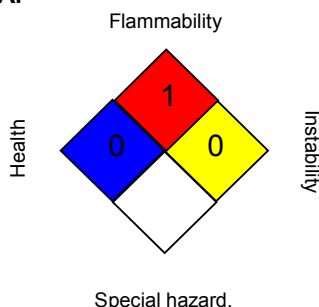
Additional regulatory information

9-Octadecenyl-13-docosenate 17673-56-2

TSCA clearance for manufacture, import, processing, or use of this product is based on a low volume exemption from the Inventory listing requirements of TSCA (40 CFR 723.50(c) (1)). For activities regulated by TSCA, the following conditions apply: The LVE substance contained in the product may only be used as a lubricant. The low volume exemption specifies that processors and industrial users of this product will control exposure by using pumping and application apparatus for transfer and use whenever possible, and will landfill spent product containers.

Special Lubricant DARDA

Version 1.3 Revision Date: 10/02/2015 SDS Number: 1711459-00004 Date of last issue: 09/09/2015
 Date of first issue: 03/25/2015

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 ACGIH / TWA : 8-hour, time-weighted average
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
 OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand

Special Lubricant DARDA

Version	Revision Date:	SDS Number:	Date of last issue: 09/09/2015
1.3	10/02/2015	1711459-00004	Date of first issue: 03/25/2015

Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 10/02/2015

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8