

SAFETY DATA SHEET

According to article 31 and Annex II of the EU REACH Regulation

Version: 6.0
Revision Date: 19.02.2013
Superseded date: 09.11.2012**MOLYKOTE(R) D-321 R SPRAY****1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY**

- 1.1 Product name** : MOLYKOTE(R) D-321 R SPRAY
- 1.2 Identified uses** : Lubricants and additives
- Uses advised against** : None known.
- 1.3 Company** : Dow Corning Europe S.A.
rue Jules Bordet - Parc Industriel - Zone C
B-7180 Seneffe
Belgium
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2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

According to EU Directives 67/548/EEC or 1999/45/EC:

- R12 Extremely flammable.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67 Vapours may cause drowsiness and dizziness.

2.2 Label elements**Labelling according to EEC Directive**

- Symbols** : F+ Extremely flammable.
- R-phrases** : R12 Extremely flammable.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67 Vapours may cause drowsiness and dizziness.
- S-phrases** : S2 Keep out of the reach of children.
S16 Keep away from sources of ignition - no smoking.
S23(S) Do not breathe spray.

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S24/25 Avoid contact with skin and eyes.

S51 Use only in well-ventilated areas.

S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Do not spray on a naked flame or any incandescent material.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization: Molybdenum disulfide aerosol**According to EU Directives 67/548/EEC or 1999/45/EC:**

Name	CAS-No.	EINECS/ ELINCS No.	REACH Registration Number	Conc. (% w/w)	Classification
Butane	106-97-8	203-448-7	-	58.0	F+ R12
n-Butyl acetate	123-86-4	204-658-1	-	10.0	R10 R66 R67
Naphtha (petroleum), hydrodesulfurized heavy	64742-82-1	265-185-4	01-21194848 09-19	8.9	Xn R10 R65 R66 R67 N R51/53
Molybdenum sulfide	1317-33-5	215-263-9	-	6.0	Substance with a Community workplace exposure limit
Polybutyl titanate	9022-96-2	Exempt or not available	-	3.5	Xi R36
Graphite	7782-42-5	231-955-3	-	1.6	Substance with a Community workplace exposure limit
Zinc oxide	1314-13-2	215-222-5	01-21194638 81-32	0.19	N R50/53

According to Regulation (EC) No. 1272/2008:

Name	CAS-No.	EINECS/ ELINCS No.	REACH Registration Number	Conc. (% w/w)	Classification
Butane	106-97-8	203-448-7	-	58.0	Flammable gas: Category 1 - H220 Gases under pressure: Liquefied gas - H280
n-Butyl acetate	123-86-4	204-658-1	-	10.0	Flammable liquid: Category 2 - H225 Specific target organ toxicity - single exposure (Inhalation - vapour): Category 3 (narcotic effects) - H336 EUH066
Naphtha (petroleum), hydrodesulfurized heavy	64742-82-1	265-185-4	01-21194848 09-19	8.9	Flammable liquid: Category 3 - H226 Specific target organ toxicity - single exposure (Inhalation - vapour): Category 3 (narcotic effects) - H336 Aspiration hazard: Category 1 - H304 Chronic aquatic hazard: Category 2 - H411 EUH066

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Molybdenum sulfide	1317-33-5	215-263-9	-	6.0	Substance with a Community workplace exposure limit
Polybutyl titanate	9022-96-2	Exempt or not available	-	3.5	Flammable liquid: Category 3 - H226 Serious eye damage/eye irritation: Category 2 - H319
Graphite	7782-42-5	231-955-3	-	1.6	Substance with a Community workplace exposure limit
Zinc oxide	1314-13-2	215-222-5	01-21194638 81-32	0.19	Acute aquatic hazard: Category 1 - H400 Chronic aquatic hazard: Category 1 - H410

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

CLP classifications are based on all current available data including from known international organizations. These classifications are subject to revision as more information becomes available.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures:

- On contact with eyes** : Flush with water.
- On skin contact** : Flush with water.
- If inhaled** : Remove to fresh air. Obtain medical attention immediately.
- On ingestion** : Obtain medical attention.

- 4.2 Most important symptoms/effects, acute and delayed** : Vapours may cause drowsiness and dizziness.

5. FIRE-FIGHTING MEASURES

- 5.1 Suitable extinguishing media** : On large fires use dry chemical, foam or water spray (fog). On small fires use carbon dioxide (CO₂), dry chemical or water spray. Water can be used to cool fire exposed containers.
- Unsuitable extinguishing media** : None known.
- 5.2 Hazards during fire fighting** : Pressurised container capable of exploding if heated.

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- Hazardous Combustion Products** : Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde. Sulphur products. Nitrogen products.
- 5.3 Special protective equipment/procedures** : A self-contained respirator and protective clothing should be worn. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** : A self-contained respirator and protective clothing should be worn. Determine the need to evacuate or isolate the area according to your local emergency plan. Eliminate all possible sources of ignition.
- 6.2 Environmental precautions** : Do not empty into drains. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.
- 6.3 Methods and materials for containment and cleaning up** : Determine the need to evacuate or isolate the area according to your local emergency plan. Eliminate all possible sources of ignition.

7. HANDLING AND STORAGE

- 7.1 Advice on safe handling** : General ventilation is required. Local ventilation is required. Do not breathe spray or mist. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - no smoking. Avoid skin and eye contact. Do not breathe vapour. Do not empty into drains.
- 7.2 Advice on storage** : Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Store in a flameproof, well ventilated area. Storage temperature: minimum 0 °C, maximum 32 °C
- 7.3 Specific uses** : Refer to technical data sheet available on request.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Name	CAS-No.	Exposure Limits
Butane	106-97-8	600 ppm TWA 750 ppm STEL 1,450 mg/m3 TWA 1,810 mg/m3 STEL
n-Butyl acetate	123-86-4	150 ppm TWA 200 ppm STEL 724 mg/m3 TWA

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966 mg/m3 STEL

Naphtha (petroleum),
 hydrodesulfurized heavy

64742-82-1

100 ppm TWA (supplier recommendation).

Molybdenum sulfide

1317-33-5

10 mg/m3 TWA as Mo, insoluble compounds
 20 mg/m3 STEL as Mo, insoluble compounds

Polybutyl titanate

9022-96-2

50 ppm STEL as n-Butanol
 154 mg/m3 STEL as n-Butanol

Graphite

7782-42-5

10 mg/m3 TWA Inhalable dust
 4 mg/m3 STEL Respirable dust

8.2 Exposure controls

Engineering Controls : Ventilation : Refer to Section 7.1

Personal protection equipment

Respiratory protection : A suitable respirator must be worn if the product is used in any circumstances where an aerosol or mist may be generated, such as during spraying or similar activities. Suitable respiratory protection should be worn if the product is used in large quantities, confined spaces or in other circumstances where the OEL may be approached or exceeded.
 Depending on the working conditions, wear a respiratory mask with filter(s) AXP or use a self-contained respirator.
 The choice of a filter type depends on the amount and type of chemical being handled in the workplace. Regarding filter characteristics, contact your respiratory protection supplier.

Hand protection : Chemical protective gloves should be worn: Polyvinyl alcohol(PVA). Silver shield(TM). 4H(TM). Viton(TM). Regarding glove's breakthrough time,contact your chemical protective glove supplier.

Eye/face protection : Safety goggles should be worn.

Skin protection : Wear impervious overalls in circumstances where significant skin contact can occur.

Hygiene measures : Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

Environmental exposure controls : Refer to section 6 and 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Aerosol

Colour : Black

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MOLYKOTE(R) D-321 R SPRAY**Odour** : Solvent**Explosive properties** : No**Specific Gravity** : 1.05**Oxidizing properties** : No

The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

10. STABILITY AND REACTIVITY**10.1 Reactivity** : None known.**10.2 Stability** : Stable under normal usage conditions.**10.3 Possibility of hazardous reactions** : None known.**10.4 Conditions to avoid** : Eliminate all possible sources of ignition.**10.5 Materials to avoid** : Can react with strong oxidising agents.**10.6 Hazardous decomposition products** : Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde. Sulphur products. Nitrogen products.**11. TOXICOLOGICAL INFORMATION****Acute toxicity:****On contact with eyes** : Slightly irritating.**On skin contact** : Slightly irritating.**If inhaled** : May cause pulmonary oedema and pneumonitis. Single exposure may cause transient drowsiness and dizziness.**On ingestion** : Small amounts transferred to the mouth by fingers during use should not injure. Swallowing large amounts may cause systemic adverse effects.**Chronic toxicity:****On skin contact** : Can irritate on prolonged or repeated skin contact. Repeated or prolonged contact may cause defatting of the skin, leading to dermatitis.**If inhaled** : May cause pulmonary oedema and pneumonitis. May cause dizziness, drowsiness, confusion, headaches, nausea, and at high concentrations, unconsciousness.**On ingestion** : Small amounts transferred to the mouth by fingers during use should not injure.

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Toxicokinetics, metabolism and distribution : No specific information is available.

- ¹ Based on product test data.
² Based on test data from similar products.

12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity effects**

Harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

Organic solvents may evaporate into the atmosphere, where they degrade. The organic solvents in the product are biodegradable.

12.3 Bioaccumulation

Low potential to bioaccumulate.

12.4 Release to waters / Mobility in soil**Fate and effects in waste water treatment plants:**

May cause adverse effects on bacteria. If used as intended this product is not expected to reach waste water treatment plants.

13. DISPOSAL CONSIDERATIONS

Product and packaging disposal : Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

14. TRANSPORT INFORMATION**Road / Rail (ADR/RID)**

UN No. : UN 1950
Proper Shipping Name : AEROSOLS
Class : 2
Labels : 2.1

Sea transport (IMDG)

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UN No.	:	UN 1950
Proper Shipping Name	:	AEROSOLS
Class	:	2.1
Emergency Schedule (EmS)	:	F-D S-U
<u>Air transport (IATA)</u>		
UN No.	:	UN 1950
Proper Shipping Name	:	Aerosols, flammable
Class	:	2.1
Labels	:	Flammable Gas
	:	Apply Gross Wt Supplemental Label to Outer Package if shipping Limited Quantity

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Status**

EINECS	:	All ingredients listed, exempt or notified (ELINCS).
TSCA	:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
AICS	:	All ingredients listed, exempt or notified.
IECSC	:	All ingredients listed or exempt.
ENCS/ISHL	:	Consult your local Dow Corning office.
KECL	:	All ingredients listed, exempt or notified.
PICCS	:	All ingredients listed, exempt or notified.
DSL	:	All ingredients listed or exempt.

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MOLYKOTE(R) D-321 R SPRAY**16. OTHER INFORMATION**

This product safety data sheet was prepared in compliance with article 31 and Annex II of the EU REACH Regulation as well as its relevant amendments, on the approximation of laws, regulations and administrative provisions relative to the classification, packaging and labelling of dangerous substances and preparations.

It is the responsibility of persons in receipt of this Product Safety Data Sheet to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces a formulation containing the Dow Corning product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from the Dow Corning Product Safety Data Sheet to their own Product Safety Data Sheet in compliance with article 31 and Annex II of the EU REACH Regulation.

All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS. Dow Corning shall not be held responsible for any defect in the product covered by this SDS, should the existence of such defect not be detectable considering the current state of scientific and technical knowledge.

As stated above, this Safety Data Sheet has been prepared in compliance with applicable European law. If you purchase this material outside Europe, where compliance laws may differ, you should receive from your local Dow Corning supplier a SDS applicable to the country in which the product is sold and intended to be used. Please note that the appearance and content of the SDS may vary - even for the same product - between different countries, reflecting the different compliance requirements. Should you have any question, please refer to your local Dow Corning supplier.

Source of information: Internal data and publically available information

R10 Flammable., **R12** Extremely flammable., **R36** Irritating to eyes., **R50/53** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment., **R51/53** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment., **R65** Harmful: May cause lung damage if swallowed., **R66** Repeated exposure may cause skin dryness or cracking., **R67** Vapours may cause drowsiness and dizziness.

H220 Extremely flammable gas., **H225** Highly flammable liquid and vapour., **H226** Flammable liquid and vapour., **H280** Contains gas under pressure; may explode if heated., **H304** May be fatal if swallowed and enters airways., **H319** Causes serious eye irritation., **H336** May cause drowsiness or dizziness., **H400** Very toxic to aquatic life., **H410** Very toxic to aquatic life with long lasting effects., **H411** Toxic to aquatic life with long lasting effects.