

SAFETY DATA SHEET



Anti-Friction Spray MoS2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Anti-Friction Spray MoS2
UFI : FFD0-J0UM-600X-RXG2
Product code : 115390
Color : Black.

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

Identified uses
Aerosol product-Lubricating agent

1.3 Details of the supplier of the safety data sheet

WEICON GmbH & Co. KG
Königsberger Str. 255
48157 Münster
Germany
Phone: +49 251 93220
Fax: +49(0)251 / 9322 - 244
Internet: www.weicon.de

e-mail address of person responsible for this SDS : msds@weicon.de

1.4 Emergency telephone number

Telephone number : EMERGENCY CONTACT – UK, UAE, South Africa (24h): Tel: ++44 1865 407333 (English)
TRANSPORT EMERGENCY CONTACT - UK, UAE, South Africa (24h): Tel: ++44 1865 407333 (English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aerosol 1, H222, H229
Skin Irrit. 2, H315
Eye Dam. 1, H318
Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

SECTION 2: Hazards identification

Hazard statements	: H222, H229 - Extremely flammable aerosol. Pressurized container: may burst if heated. H315 - Causes skin irritation. H318 - Causes serious eye damage. H412 - Harmful to aquatic life with long lasting effects.
<u>Precautionary statements</u>	
Prevention	: P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 - Do not spray on an open flame or other ignition source. P273 - Avoid release to the environment. P264 - Wash thoroughly after handling. P251 - Do not pierce or burn, even after use.
Response	: P362 + P364 - Take off contaminated clothing and wash it before reuse. P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
Storage	: P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Disposal	: P501 - Dispose of waste according to applicable legislation.
Hazardous ingredients	: 1-Butanol, titanium(4+) salt (4:1), homopolymer
Supplemental label elements	: Contains Hydrocarbons, terpene processing by-products. May produce an allergic reaction.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII	: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Other hazards which do not result in classification	: Aspiration hazard - Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
butane	REACH #: 01-2119474691-32 EC: 203-448-7 CAS: 106-97-8 Index: 601-004-00-0	≥50 - ≤75	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	[2]
propane	REACH #: 01-2119486944-21 EC: 200-827-9 CAS: 74-98-6 Index: 601-003-00-5	≥10 - ≤25	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	[2]
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	REACH #: 01-2119475514-35 EC: 921-024-6 CAS: -	≥10 - <20	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304	[1]

SECTION 3: Composition/information on ingredients

1-Butanol, titanium(4+) salt (4:1), homopolymer	REACH #: pre-registered CAS: 9022-96-2	≤10	Aquatic Chronic 2, H411 Eye Dam. 1, H318	[1]
isobutane	REACH #: 01-2119485395-27 EC: 200-857-2 CAS: 75-28-5 Index: 601-004-00-0	≤10	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	[2]
n-hexane	EC: 203-777-6 CAS: 110-54-3 Index: 601-037-00-0	<1	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1] [2]
Hydrocarbons, terpene processing by-products	REACH #: 01-2119980606-28 EC: 273-309-3 CAS: 68956-56-9	<1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1]
cyclohexane	REACH #: 01-2119463273-41 EC: 203-806-2 CAS: 110-82-7 Index: 601-017-00-1	≤0.24	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) See Section 16 for the full text of the H statements declared above.	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

SECTION 4: First aid measures

- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Extremely flammable aerosol. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

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

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance.

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

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

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P3a	150 tonne	500 tonne

7.3 Specific end use(s)

Recommendations : Not available.
Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
butane	TRGS 900 OEL (Germany, 3/2020). TWA: 2400 mg/m ³ 8 hours. PEAK: 9600 mg/m ³ 15 minutes. TWA: 1000 ppm 8 hours. PEAK: 4000 ppm 15 minutes. DFG MAC-values list (Germany, 7/2019). TWA: 1000 ppm 8 hours. PEAK: 4000 ppm, 4 times per shift, 15 minutes. TWA: 2400 mg/m ³ 8 hours. PEAK: 9600 mg/m ³ , 4 times per shift, 15 minutes.

SECTION 8: Exposure controls/personal protection

propane	<p>TRGS 900 OEL (Germany, 10/2020). TWA: 1800 mg/m³ 8 hours. PEAK: 7200 mg/m³ 15 minutes. TWA: 1000 ppm 8 hours. PEAK: 4000 ppm 15 minutes.</p> <p>DFG MAC-values list (Germany, 8/2020). TWA: 1000 ppm 8 hours. PEAK: 4000 ppm, 4 times per shift, 15 minutes. TWA: 1800 mg/m³ 8 hours. PEAK: 7200 mg/m³, 4 times per shift, 15 minutes.</p>
isobutane	<p>TRGS 900 OEL (Germany, 3/2020). TWA: 2400 mg/m³ 8 hours. PEAK: 9600 mg/m³ 15 minutes. TWA: 1000 ppm 8 hours. PEAK: 4000 ppm 15 minutes.</p> <p>DFG MAC-values list (Germany, 7/2019). TWA: 1000 ppm 8 hours. PEAK: 4000 ppm, 4 times per shift, 15 minutes. TWA: 2400 mg/m³ 8 hours. PEAK: 9600 mg/m³, 4 times per shift, 15 minutes.</p>
n-hexane	<p>TRGS 900 OEL (Germany, 10/2020). TWA: 180 mg/m³ 8 hours. PEAK: 1440 mg/m³ 15 minutes. TWA: 50 ppm 8 hours. PEAK: 400 ppm 15 minutes.</p> <p>DFG MAC-values list (Germany, 8/2020). TWA: 50 ppm 8 hours. PEAK: 400 ppm, 4 times per shift, 15 minutes. TWA: 180 mg/m³ 8 hours. PEAK: 1440 mg/m³, 4 times per shift, 15 minutes.</p>
cyclohexane	<p>TRGS 900 OEL (Germany, 10/2020). TWA: 700 mg/m³ 8 hours. PEAK: 2800 mg/m³ 15 minutes. TWA: 200 ppm 8 hours. PEAK: 800 ppm 15 minutes.</p> <p>DFG MAC-values list (Germany, 8/2020). TWA: 200 ppm 8 hours. PEAK: 800 ppm, 4 times per shift, 15 minutes. TWA: 700 mg/m³ 8 hours. PEAK: 2800 mg/m³, 4 times per shift, 15 minutes.</p>

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Exposure	Value	Population	Effects
n-hexane	DNEL	Long term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	5.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	11 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	16 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	75 mg/m ³	Workers	Systemic
Hydrocarbons, terpene processing by-products	DNEL	Long term Oral	0.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.7 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	0.8 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.9 mg/m ³	Workers	Systemic
cyclohexane	DNEL	Long term Oral	59.4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	206 mg/m ³	General population	Local
	DNEL	Long term Inhalation	206 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	412 mg/m ³	General population	Local
	DNEL	Short term Inhalation	412 mg/m ³	General population	Systemic
	DNEL	Short term Inhalation	700 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	700 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	700 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	700 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1186 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	2016 mg/kg bw/day	Workers	Systemic

PNECs

SECTION 8: Exposure controls/personal protection

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

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

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Recommended : 1 - 4 hours (breakthrough time): nitrile rubber 4 - 8 hours (breakthrough time): Viton®/butyl rubber

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

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

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Aerosol.
Color : Black.
Odor : Characteristic.
Odor threshold : Not available.
Melting point/freezing point : Not available.

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	: Not available.
Flammability (solid, gas)	: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Highly flammable in the presence of the following materials or conditions: heat.
Upper/lower flammability or explosive limits	: Lower: 0.8% Upper: 10.9%
Flash point	: Closed cup: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
pH	: Not applicable.
Viscosity	: Not available.
Solubility(ies)	: Insoluble in the following materials: cold water and hot water.
Solubility in water	: Not available.
Miscible with water	: No.
Partition coefficient: n-octanol/ water	: Not applicable.
Vapor pressure	: 293.3 to 450 kPa (2200 to 3375 mm Hg)
Evaporation rate	: Not available.
Relative density	: Not available.
Density	: 0.625 g/cm ³ [20°C (68°F)]
Vapor density	: Not available.
Explosive properties	: Not available.
Oxidizing properties	: Not available.
<u>Particle characteristics</u>	
Median particle size	: Not applicable.
Fire point	: >285°C
SADT	: Not available.
SAPT	: Not available.
Heat of combustion	: 38.45 kJ/g
<u>Aerosol product</u>	
Type of aerosol	: Spray

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
10.5 Incompatible materials	: No specific data.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
cyclohexane	LD50 Oral	Rat	6240 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

	ATE value
Not available.	

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-hexane	Eyes - Mild irritant	Rabbit	-	10 mg	-

Conclusion/Summary : Not available.

Sensitization

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	Category 3	-	Narcotic effects
n-hexane	Category 3	-	Narcotic effects
cyclohexane	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
n-hexane	Category 2	-	-

Aspiration hazard

Product/ingredient name	Result
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
Hydrocarbons, terpene processing by-products	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

SECTION 11: Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness
Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
Ingestion : Adverse symptoms may include the following:
stomach pains

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

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.
General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
n-hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
cyclohexane	Acute LC50 4530 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
n-hexane	4	501.187	high
cyclohexane	3.44	167	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

European waste catalogue (EWC)

Waste code	Waste designation
16 05 04*	gases in pressure containers (including halons) containing hazardous substances




Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Type of packaging	European waste catalogue (EWC)
15 01 04	metallic packaging

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	<input checked="" type="checkbox"/> UN1950	UN1950	UN1950
14.2 UN proper shipping name	<input checked="" type="checkbox"/> AEROSOLS	AEROSOLS	Aerosols, flammable
14.3 Transport hazard class(es)	2 	2.1 	2.1 
14.4 Packing group	-	-	-
14.5 Environmental hazards	No. <input checked="" type="checkbox"/> Not available.	No. <input checked="" type="checkbox"/> Not available.	No.

Additional information

- ADR/RID** : **Limited quantity** 1 L
Special provisions 190, 327, 625, 344
Tunnel code (D)
ADR Classification Code: 5F
- IMDG** : **Emergency schedules** F-D, S-U
Special provisions 63, 190, 277, 327, 344, 381, 959
- IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Packaging instructions: 203. Cargo Aircraft Only: 150 kg. Packaging instructions: 203. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y203.
Special provisions A145, A167, A802
- 14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- 14.7 Transport in bulk according to IMO instruments** : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Restrictions on Manufacture, Marketing and Use

SECTION 15: Regulatory information

Product name	CAS #	%	Restriction
butane	106-97-8	50 - 70	28, 29
Hydrocarbons, C6-C7, n-alkanes, isoalkanes, cyclics, <5% n-hexane	-	10 - 15	3
Isobutane	75-28-5	2.5 - 10	28, 29
n-hexane	110-54-3	0.25 - 1	3
Hydrocarbons, terpene processing by-products	68956-56-9	0.25 - 1	3
cyclohexane	110-82-7	0.025 - 0.25	3, 57

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Aerosol dispensers :

3



Extremely flammable

VOC content : 90 %

VOC (g/L) : 615

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

Category

P3a

National regulations

Product/ingredient name	List name	Name on list	Classification	Notes
butane	DFG MAC-values list	Butane (both isomers)	Listed	-
propane	DFG MAC-values list	Propane	Listed	-
isobutane	DFG MAC-values list	Butane (both isomers)	Listed	-
n-hexane	DFG MAC-values list	Hexane; n-Hexane	Listed	-
cyclohexane	DFG MAC-values list	Cyclohexane	Listed	-

Storage class (TRGS 510) : 2B

Hazardous incident ordinance

SECTION 15: Regulatory information

This product is controlled under the Germany Hazardous Incident Ordinance.

Danger criteria

Category	Reference number
P3a	1.2.3.1

Hazard class for water : 1

Technical instruction on air quality control : TA-Luft Number 5.2.5: 72.8-100%
TA-Luft Class I - Number 5.2.5: 0.2-1%

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: <input checked="" type="checkbox"/> All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: Not determined.
Japan	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

 Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Anti-Friction Spray MoS2

SECTION 16: Other information

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aerosol 1, H222, H229 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H220	Extremely flammable gas.
H222, H229	Extremely flammable aerosol. Pressurized container: may burst if heated.
H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
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.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aerosol 1	AEROSOLS - Category 1
Aquatic Acute 1	AQUATIC HAZARD (ACUTE) - Category 1
Aquatic Chronic 1	AQUATIC HAZARD (LONG-TERM) - Category 1
Aquatic Chronic 2	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3	AQUATIC HAZARD (LONG-TERM) - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Flam. Gas 1A	FLAMMABLE GASES - Category 1A
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Press. Gas (Comp.)	GASES UNDER PRESSURE - Compressed gas
Repr. 2	TOXIC TO REPRODUCTION - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITIZATION - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 3

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