

MOLYKOTE(R) D-7409 ANTI-FRICTION COATING

Version	Revision Date:	SDS Number:	Date of last issue: 07/08/2015
2.0	10/15/2015	731286-00005	Date of first issue: 11/10/2014

SECTION 1. IDENTIFICATION

Product name : MOLYKOTE(R) D-7409 ANTI-FRICTION COATING

Product code : 000000000004090125

Manufacturer or supplier's details

Company name of supplier : Dow Corning Corporation

Address : South Saginaw Road
Midland Michigan 48686

Telephone : (989) 496-6000

Emergency telephone : 24 Hour Emergency Telephone : (989) 496-5900
CHEMTREC : (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Lubricants and lubricant additives

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 3

Skin irritation : Category 2

Serious eye damage : Category 1

Reproductive toxicity : Category 1B

Specific target organ systemic toxicity - single exposure : Category 3

Specific target organ systemic toxicity - repeated exposure : Category 2 (Central nervous system, Liver, Kidney, Auditory system)

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H315 Causes skin irritation.

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H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (Central nervous system, Liver, Kidney, Auditory system) through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

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Chemical nature : Inorganic and organic compounds
 Mixture

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
N-Ethyl-2-pyrrolidone	2687-91-4	>= 30 - < 50
Xylene	1330-20-7	>= 20 - < 30
Molybdenum sulfide	1317-33-5	>= 10 - < 20
Ethylbenzene	100-41-4	>= 5 - < 10
Graphite	7782-42-5	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
 Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
 Get medical attention.
 Wash clothing before reuse.
 Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
 If easy to do, remove contact lens, if worn.
 Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.
 Get medical attention.
 Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.
 Causes serious eye damage.
 May cause respiratory irritation.
 May damage fertility or the unborn child.
 May cause damage to organs through prolonged or repeated exposure.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
- Notes to physician : Treat symptomatically and supportively.

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SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapors may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
Metal oxides
Sulfur oxides
- 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 : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.
Use personal protective equipment.
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.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
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 : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapors/mists with a water spray jet.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be
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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 with local exhaust ventilation.
Use only in an area equipped with explosion proof exhaust ventilation. |
| Advice on safe handling | : | Do not get on skin or clothing.
Do not breathe vapors or spray mist.
Do not swallow.
Do not get in eyes.
Handle in accordance with good industrial hygiene and safety practice.
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | : | Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition. |
| Materials to avoid | : | Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases |

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Xylene	1330-20-7	TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
Molybdenum sulfide	1317-33-5	TWA (total dust)	15 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA (Inhalable fraction)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable fraction)	3 mg/m ³ (Molybdenum)	ACGIH
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm 435 mg/m ³	NIOSH REL
		ST	125 ppm 545 mg/m ³	NIOSH REL
Graphite	7782-42-5	TWA (Respirable)	2.5 mg/m ³	NIOSH REL
		TWA (Respirable fraction)	2 mg/m ³	ACGIH
		TWA (Dust)	15 Million particles per cubic foot	OSHA Z-3

Hazardous components without workplace control parameters

Ingredients	CAS-No.
N-Ethyl-2-pyrrolidone	2687-91-4

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Xylene	1330-20-7	Methylhippuric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI
Ethylbenzene	100-41-4	Sum of mandelic acid and phenyl gly-	Urine	End of shift (As soon as possible)	0.15 g/g creatinine	ACGIH BEI

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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.
For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com) or contact the Dow Corning customer service group.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: gray
Odor	: aromatic
Odor Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: 138 °C
Flash point	: 40 °C Method: Tag closed cup
Evaporation rate	: No data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1.1
Solubility(ies) Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available

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Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : 400 mPa.s

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 : Flammable liquid and vapor.
Vapors may form explosive mixture with air.
Can react with strong oxidizing agents.
When heated to temperatures above 150 °C (300 °F) in the presence of air, product can form formaldehyde vapors.
Safe handling conditions may be maintained by keeping vapor concentrations within the occupational exposure limit for formaldehyde.
Formaldehyde may cause cancer. It is also toxic by inhalation, skin absorption and ingestion, corrosive to skin and eyes, and may cause skin sensitization and respiratory irritation.
See OSHA formaldehyde standard, 29 CFR 1910.1048

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

|| Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

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Acute inhalation toxicity : Acute toxicity estimate: 45.3 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:**N-Ethyl-2-pyrrolidone:**

Acute oral toxicity : LD50 (Rat): 3,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

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

Xylene:

Acute oral toxicity : LD50 (Rat): 4,300 mg/kg
Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : LC50 (Rat): 27.5 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute toxicity estimate: 11 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Expert judgment
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg
Method: Expert judgment
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Molybdenum sulfide:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

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Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Ethylbenzene:

Acute oral toxicity : LD50 (Rat): 3,500 mg/kg
Acute inhalation toxicity : LC50 (Rat): 17.2 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Graphite:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity : LC50 (Rat): > 2 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

Skin corrosion/irritation

Causes skin irritation.

Ingredients:**N-Ethyl-2-pyrrolidone:**

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

Xylene:

Species: Rabbit
Result: Skin irritation

Molybdenum sulfide:

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

Graphite:

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

Serious eye damage/eye irritation

Causes serious eye damage.

Ingredients:

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N-Ethyl-2-pyrrolidone:

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

Xylene:

Species: Rabbit
Result: Irritation to eyes, reversing within 7 days

Molybdenum sulfide:

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

Ethylbenzene:

Species: Rabbit
Result: No eye irritation

Graphite:

Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitization

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

Ingredients:**N-Ethyl-2-pyrrolidone:**

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Xylene:

Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Molybdenum sulfide:

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

Ethylbenzene:

Test Type: Human repeat insult patch test (HRIPT)
Routes of exposure: Skin contact
Result: negative

Graphite:

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

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

N-Ethyl-2-pyrrolidone:

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: Ingestion
 Method: OECD Test Guideline 474
 Result: negative

Xylene:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
 Result: negative

: Test Type: In vitro sister chromatid exchange assay in mammalian cells
 Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)
 Species: Mouse
 Application Route: Skin contact
 Result: negative

Molybdenum sulfide:

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

Ethylbenzene:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
 Result: negative

: Test Type: In vitro mammalian cell gene mutation test
 Method: OECD Test Guideline 476
 Result: negative

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
 Species: Mouse
 Application Route: Inhalation
 Method: OECD Test Guideline 486
 Result: negative

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II**Graphite:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:**Xylene:**

Species: Rat
 Application Route: Ingestion
 Exposure time: 103 weeks
 Result: negative

Molybdenum sulfide:

Species: Rat
 Application Route: Ingestion
 Exposure time: 232 days
 Result: negative

Ethylbenzene:

Species: Rat
 Application Route: Inhalation
 Exposure time: 104 weeks
 Result: positive
 Remarks: The mechanism or mode of action may not be relevant in humans.

IARC

Group 2B: Possibly carcinogenic to humans

Ethylbenzene

100-41-4

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

May damage fertility or the unborn child.

Ingredients:**N-Ethyl-2-pyrrolidone:**

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rabbit
 Application Route: Ingestion
 Method: OECD Test Guideline 414
 Result: positive

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.

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||**Xylene:**

Effects on fertility : Test Type: One-generation reproduction toxicity study
 Species: Rat
 Application Route: inhalation (vapor)
 Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: inhalation (vapor)
 Result: negative

Ethylbenzene:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
 Species: Rat
 Application Route: inhalation (vapor)
 Method: OECD Test Guideline 415
 Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
 Species: Rat
 Application Route: Inhalation
 Method: OECD Test Guideline 414
 Result: negative

Graphite:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Method: OECD Test Guideline 422
 Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
 Species: Rat
 Application Route: Ingestion
 Method: OECD Test Guideline 422
 Result: negative

STOT-single exposure**||** May cause respiratory irritation.**Ingredients:****Xylene:****||** Assessment: May cause respiratory irritation.**STOT-repeated exposure****||** May cause damage to organs (Central nervous system, Liver, Kidney, Auditory system) through prolonged or repeated exposure.**Ingredients:****Xylene:**

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Routes of exposure: inhalation (vapor)
Target Organs: Central nervous system, Liver, Kidney
Assessment: Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Ethylbenzene:

Routes of exposure: inhalation (vapor)
Target Organs: Auditory system
Assessment: Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Repeated dose toxicity**Ingredients:****N-Ethyl-2-pyrrolidone:**

Species: Rat
NOAEL: 100 mg/kg
Application Route: Ingestion
Exposure time: 3 Months
Method: OECD Test Guideline 408

Xylene:

Species: Rat
NOAEL: 4.35 mg/l
Application Route: inhalation (vapor)
Exposure time: 90 Days

Ethylbenzene:

Species: Rat, female
LOAEL: 75 ppm
Application Route: inhalation (vapor)
Exposure time: 104 Weeks

Graphite:

Species: Rat
NOAEL: 12 mg/m³
Application Route: inhalation (dust/mist/fume)
Exposure time: 28 Days
Method: OECD Test Guideline 412

Aspiration toxicity

Not classified based on available information.

Ingredients:**Xylene:**

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.

Ethylbenzene:

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.

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****N-Ethyl-2-pyrrolidone:**

Toxicity to fish	: LC50 (Danio rerio (zebra fish)): > 464 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 104 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	: NOEC (Desmodesmus subspicatus (green algae)): > 101 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 12.5 mg/l Exposure time: 21 d Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

Xylene:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 2.6 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	: IC50 (Daphnia magna (Water flea)): 1 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae	: EC10 (Pseudokirchneriella subcapitata (green algae)): 1.9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials ErC50 (Pseudokirchneriella subcapitata (green algae)): 4.36 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): > 1.3 mg/l Exposure time: 56 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: EC10 (Daphnia magna (Water flea)): 1.91 mg/l Exposure time: 21 d Method: OECD Test Guideline 211

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	Remarks: Based on data from similar materials
Toxicity to bacteria	: EC50: > 157 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Molybdenum sulfide:	
Toxicity to fish	: LC50 (Pimephales promelas (fathead minnow)): 644.2 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 130.9 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)): 289.2 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): > 17 mg/l Exposure time: 12 Months Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Ceriodaphnia dubia (water flea)): 156.5 mg/l Exposure time: 21 d Remarks: Based on data from similar materials
Toxicity to bacteria	: NOEC: > 950 mg/l Exposure time: 17 d Remarks: Based on data from similar materials
Ethylbenzene:	
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l Exposure time: 48 h
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 5.4 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l Exposure time: 7 d
Toxicity to bacteria	: EC50 (Nitrosomonas sp.): 96 mg/l Exposure time: 24 h Method: OECD Test Guideline 209

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II**Graphite:**

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 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 : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
- Toxicity to bacteria : EC50: > 1,012.5 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

Persistence and degradability**Ingredients:****N-Ethyl-2-pyrrolidone:**

- Biodegradability : Result: Readily biodegradable.
 Biodegradation: 90 - 100 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301A

Xylene:

- Biodegradability : Result: Readily biodegradable.
 Biodegradation: 87.8 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301F
 Remarks: Based on data from similar materials

Ethylbenzene:

- Biodegradability : Result: Readily biodegradable.
 Biodegradation: 70 - 80 %
 Exposure time: 28 d

Bioaccumulative potential**Ingredients:****N-Ethyl-2-pyrrolidone:**

- Partition coefficient: n-octanol/water : log Pow: -0.2

Xylene:

- Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
 Bioconcentration factor (BCF): 5.4 - 25.9
- Partition coefficient: n-octanol/water : log Pow: 3.12 - 3.2

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II**Ethylbenzene:**

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): < 100 Remarks: Based on data from similar materials
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Partition coefficient: n-octanol/water	:	log Pow: 3.6
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Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Resource Conservation and Recovery Act (RCRA)	:	When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste.
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Waste Code	:	D001: Ignitability D018
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Waste from residues	:	Dispose of in accordance with local regulations.
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Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum. If not otherwise specified: Dispose of as unused product.
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SECTION 14. TRANSPORT INFORMATION**International Regulation****UNRTDG**

UN number	:	UN 3295
Proper shipping name	:	HYDROCARBONS, LIQUID, N.O.S.
Class	:	3
Packing group	:	III
Labels	:	3

IATA-DGR

UN/ID No.	:	UN 3295
Proper shipping name	:	Hydrocarbons, liquid, n.o.s.
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo)	:	366

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aircraft)
 Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 3295
 Proper shipping name : HYDROCARBONS, LIQUID, N.O.S.

Class : 3
 Packing group : III
 Labels : 3
 EmS Code : F-E, S-D
 Marine pollutant : no

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

Not applicable for product as supplied.

Domestic regulation**49 CFR**

UN/ID/NA number : UN 3295
 Proper shipping name : HYDROCARBONS, LIQUID, N.O.S.

Class : CBL
 Packing group : III
 Labels : None
 ERG Code : 128
 Marine pollutant : no

Remarks : Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters). If transporting by vessel or aircraft, unless other means of transportation is impracticable, then the product must be shipped as a flammable liquid.

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

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene	1330-20-7	100	500
Ethylbenzene	100-41-4	1000	14925

SARA 304 Extremely Hazardous Substances Reportable Quantity

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

SARA 311/312 Hazards : Fire Hazard
 Acute Health Hazard
 Chronic Health Hazard

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

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Xylene	1330-20-7	20 %
Ethylbenzene	100-41-4	6.7 %

US State Regulations**Pennsylvania Right To Know**

N-Ethyl-2-pyrrolidone	2687-91-4	30 - 50 %
Xylene	1330-20-7	20 - 30 %
Polyaminoamide	Not Assigned	10 - 20 %
Molybdenum sulfide	1317-33-5	10 - 20 %
Ethylbenzene	100-41-4	5 - 10 %
Graphite	7782-42-5	1 - 5 %

New Jersey Right To Know

N-Ethyl-2-pyrrolidone	2687-91-4	30 - 50 %
Xylene	1330-20-7	20 - 30 %
Polyaminoamide	Not Assigned	10 - 20 %
Molybdenum sulfide	1317-33-5	10 - 20 %
Ethylbenzene	100-41-4	5 - 10 %
Graphite	7782-42-5	1 - 5 %

California Prop. 65 WARNING! This product contains a chemical known in the State of California to cause cancer.

Ethylbenzene	100-41-4
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The ingredients of this product are reported in the following inventories:

NZIoC : All ingredients listed or exempt.

REACH : All ingredients (pre-)registered or exempt.

IECSC : All ingredients listed or exempt.

ENCs/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.

KECI : All ingredients listed, exempt or notified.

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 : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical

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Substances.

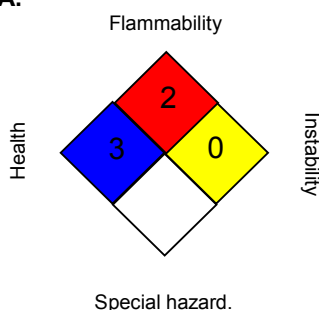
AICS : Consult your local Dow Corning office.

TCSI : All ingredients listed or exempt.

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
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)
 ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
 ACGIH / TWA : 8-hour, time-weighted average
 ACGIH / STEL : Short-term exposure limit
 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
 OSHA Z-3 / 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

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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 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/>

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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.

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