

1. Product and company identification

Product identifier

Trade name: Anti Friction Coating MoS2

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

General use: Technical aerosol

Details of the supplier of the safety data sheet

Company name: WEICON Inc.

Street/POB-No.: 20 Steckle Place, Unit 20

Postal Code, city: Kitchener, Ontario N2E 2C3, CA

WWW: www.weicon.ca

E-mail: info@weicon.ca

Telephone: +1-519-896-5252

Telefax: +1-519-896-5254

Dept. responsible for information:

Product-Safety-Department

Telephone: +49(0)251 / 9322 - 0, Email: msds@weicon.de

Additional information: WEICON GmbH & Co. KG

Königsberger Straße 255

Münster 48157

www.weicon.de

info@weicon.de

+49(0)251 / 9322 - 0

+49(0)251 / 9322 - 244

Emergency phone number

GIZ, Bonn Germany (English)

Telephone: +49(0)228 / 19 240

2. Hazards identification

Emergency overview

Appearance: Physical state at 68 °F and 101.3 kPa: liquid

Form: Aerosol

Color: gray

Odor: characteristic

Classification: Aerosol - Category 1; Specific Target Organ Toxicity (Single Exposure) - Category 3;
Aquatic toxicity - chronic - Category 3;

Hazard symbols:



Signal word:

Danger

Hazard statements:

Extremely flammable aerosol.

Pressurised container: May burst if heated.

May cause drowsiness or dizziness.

Harmful to aquatic life with long lasting effects.



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Precautionary statements: Keep out of reach of children.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Avoid breathing spray.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor if you feel unwell.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Inhaling can lead to irritations of the respiratory tract and mucous membrane.

Higher doses may have a narcotic effect.

Exposure to temperatures exceeding 122 °F will increase pressure: resulting in danger of bursting or explosion.

Potentially explosive mixtures may form if adequate ventilation is not provided.

see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: Preparation of active ingredients with propellant

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 109-66-0	n-Pentane	10 - 20 %	Flammable Liquid - Category 2. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aspiration Toxicity - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 123-86-4	n-Butyl acetate	10 - 20 %	Flammable Liquid - Category 3. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 64742-82-1	Hydrocarbons, < 1 % C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)		Flammable Liquid - Category 3. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aspiration Toxicity - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 106-97-8	Butane	30 - 50 %	Flammable Gas - Category 1. Compressed Gas.
CAS 74-98-6	Propane	10 - 20 %	Flammable Gas - Category 1. Compressed Gas.
CAS 75-28-5	Isobutane	10 - 20 %	Flammable Gas - Category 1. Compressed Gas.



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4. First aid measures

General information: Take off immediately all contaminated clothing and wash it before reuse.

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Seek medical attention.

Following skin contact: After contact with skin, wash immediately with soap and plenty of water. Consult a doctor if skin irritation persists.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing.
Subsequently consult an ophthalmologist.

After swallowing: Immediately get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed

May cause drowsiness or dizziness.
Inhalation causes narcotic effects/intoxication.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

-76 °F

Auto-ignition temperature: not self-igniting

Suitable extinguishing media:

Dry chemical powder, sand, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Extremely flammable aerosol.
Do not expose to high temperature. Danger of bursting and explosion.
May form dangerous gases and vapours in case of fire.
In case of fire may be liberated: carbon monoxide and carbon dioxide.
Potentially explosive vapor/air mixtures may form.

Protective equipment and precautions for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Cool endangered containers with water jetspray. You have to dispose of contaminated extinguishing water according to the regulations of the authorities.

6. Accidental release measures

Personal precautions: Provide adequate ventilation. Do not breathe gas/vapor/spray. Avoid contact with the substance.
Eliminate all ignition sources if safe to do so. Wear protective equipment. Keep unprotected people away.
Do not open or incinerate, even when empty. Do not spray into flames or on incandescent objects.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains.
In case of release, notify competent authorities. Danger of explosion!



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Methods for clean-up: Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Beware of reignition. Thoroughly clean surrounding area. Leaking cans, cans with spillage, are to be segregated, sprayed to empty state and disposed of. Refer to section 13 (Waste removal).

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe gas/vapor/spray. Avoid contact with skin and eyes. Do not spray into eyes or onto the skin. Wear protective equipment. Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation. Take off immediately all contaminated clothing and wash it before reuse.

Precautions against fire and explosion: Container under pressure. Do not open or incinerate, even when empty. Do not spray into flames or on incandescent objects. Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Use only explosion-protected equipment/instruments. Do not weld. Vapors may form explosive mixtures with air.

Storage

Requirements for storerooms and containers:

- Keep container tightly closed and in a well-ventilated place.
- Keep container dry. Keep only in the original container.
- Protect from heat and direct sunlight. Keep at temperature not exceeding 122 °F.
- Store containers in upright position. Explosion protection required. Store locked up.

Hints on joint storage: Do not store together with combustible or self-igniting materials or any highly flammable solids. Keep away from food, drink and animal feedingstuffs.



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8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
109-66-0	n-Pentane	NIOSH: Ceiling USA: NIOSH: TWA	1800 mg/m ³ ; 610 ppm 350 mg/m ³ ; 120 ppm
123-86-4	n-Butyl acetate	USA: ACGIH: STEL USA: ACGIH: TWA USA: NIOSH: STEL USA: NIOSH: TWA USA: OSHA: TWA	950 mg/m ³ ; 200 ppm 713 mg/m ³ ; 150 ppm 950 mg/m ³ ; 200 ppm 710 mg/m ³ ; 150 ppm 710 mg/m ³ ; 150 ppm
106-97-8	Butane	USA: ACGIH: TWA USA: NIOSH: TWA	2370 mg/m ³ ; 1000 ppm 1900 mg/m ³ ; 800 ppm
74-98-6	Propane	USA: NIOSH: TWA USA: OSHA: TWA	1800 mg/m ³ ; 1000 ppm 1800 mg/m ³ ; 1000 ppm
75-28-5	Isobutane	USA: ACGIH: TWA USA: NIOSH: TWA	2370 mg/m ³ ; 1000 ppm 1900 mg/m ³ ; 800 ppm

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment. Use only explosion-proof equipment.

See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection	Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.
Skin protection	Flame retardant, antistatic and chemical resistant protective clothing. Protective gloves according to OSHA Standard - 29 CFR: 1910.138 Glove material: Nitrile rubber - Layer thickness: 0.4 mm Breakthrough time: > 60 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Respiratory protection:	Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

General hygiene considerations:

Use only non-sparking tools. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.
Do not breathe gas/vapor/spray. Avoid contact with skin and eyes.
Take off contaminated clothing and wash it before reuse.
When using do not eat, drink or smoke.
Wash hands before breaks and after work.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Physical state at 68 °F and 101.3 kPa: liquid Form: Aerosol Color: gray
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Odor:	characteristic
Odor threshold:	not determined
pH value:	no data available
Melting point/freezing point:	not determined
Initial boiling point and boiling range:	not applicable
Flash point/flash point range:	-76 °F
Evaporation rate:	no data available
Flammability:	extremely flammable aerosol
Explosion limits:	LEL (Lower Explosion Limit): 1.20 Vol-% UEL (Upper Explosive Limit): 10.90 Vol-%
Vapor pressure:	at 68 °F: 3300 hPa
Vapor density:	not determined
Density:	at 68 °F: 0.85 g/mL
Solubility:	not determined
Water solubility:	slightly miscible
Partition coefficient: n-octanol/water:	not determined
Auto-ignition temperature:	not self-igniting
Thermal decomposition:	No decomposition when used properly.
Viscosity, dynamic:	not determined
Viscosity, kinematic:	not determined
Explosive properties:	Product is not explosive. Potentially explosive vapor/air mixtures may form.
Ignition temperature:	545 °F

10. Stability and reactivity

Reactivity:	Extremely flammable aerosol. Vapors may form explosive mixtures with air.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	Container under pressure. Do not expose to high temperature. Danger of bursting and explosion.
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Protect from direct exposure to sunlight and temperatures exceeding 122 °F.
Incompatible materials:	Do not store together with combustible or self-igniting materials or any highly flammable solids.
Hazardous decomposition products:	May form dangerous gases and vapours in case of fire. In case of fire may be liberated: carbon monoxide and carbon dioxide.
Thermal decomposition:	No decomposition when used properly.



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11. Toxicological information

Toxicological tests

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.
Acute toxicity (oral): Lack of data.
Acute toxicity (dermal): Lack of data.
Acute toxicity (inhalative): Lack of data.
Skin corrosion/irritation: Lack of data.
Eye damage/irritation: Lack of data.
Sensitisation to the respiratory tract: Lack of data.
Skin sensitisation: Lack of data.
Germ cell mutagenicity/Genotoxicity: Lack of data.
Carcinogenicity: Lack of data.
Reproductive toxicity: Lack of data.
Effects on or via lactation: Lack of data.
Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure): Lack of data.
Aspiration hazard: Based on available data, the classification criteria are not met.
Further hazardous properties cannot be excluded.

Other information:

Symptoms

Inhaling can lead to irritations of the respiratory tract and mucous membrane.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects.

Mobility in soil

no data available

Persistence and degradability

Further details: no data available

Additional ecological information

Volatile organic compounds (VOC):

approx. 87.28 % by weight = 597 g/L

General information: Avoid spills and leaks. Very small amounts contaminates drinking water.

Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation. Handle empty containers with care. Incineration may cause explosion. Spray can must be completely empty for proper waste disposal.

14. Transport information**USA: Department of Transportation (DOT)**

Identification numbers: UN1950
Proper shipping name: UN 1950, AEROSOLS
DOT hazard class or division: 2.1
Label codes: 2.1
Special provisions: N82
Packaging - Exceptions: 306
Packaging - Non-bulk: None
Packaging - Bulk: None
Quantity limitations - Passenger aircraft / rail: 75 kg
Quantity limitations - Cargo only: 150 kg
Vessel stowage - Location: A
Vessel stowage - Other: 25, 87, 126

**Sea transport (IMDG)**

UN number: UN 1950
Proper shipping name: UN 1950, AEROSOLS
IMDG: Class 2.1, Subrisk -
Packing Group: -
EmS: F-D, S-U
Special provisions: 63, 190, 277, 327, 344, 959
Limited quantities: 1000 mL
EQ: E0
Contaminated packaging - Instructions: P207, LP02
Contaminated packaging - Provisions: PP87, L2
IBC - Instructions: -
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: -
Tank instructions - Provisions: -
Stowage and handling: SW1 SW22
Segregation: SG69
Properties and observations: -
Marine pollutant: no

Air transport (IATA)

UN/ID number: UN 1950
Proper shipping name: UN 1950, AEROSOLS, flammable
ICAO/IATA: Class 2.1
Hazard: Flamm. gas
EQ: E0
Passenger Ltd.Qty.: Pack.Instr. Y203 - Max. Net Qty/Pkg. 30 kg G
Passenger: Pack.Instr. 203 - Max. Net Qty/Pkg. 75 kg
Cargo: Pack.Instr. 203 - Max. Net Qty/Pkg. 150 kg
Special Provisioning: A145 A167 A802
ERG: 10L



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15. Regulatory information

National regulations - U.S. Federal Regulations

n-Pentane:	TSCA Inventory: listed; EPA flags T TSCA HPVC: not listed Clean Air Act: Accidental Release Prevention: Threshold 10000 lbs. / Basis for listing = g NIOSH Recommendations: Occupational Health Guideline: 0486
n-Butyl acetate:	TSCA Inventory: listed TSCA HPVC: not listed Clean Water Act: Hazardous Substances: RQ 5000 lbs. Other Environmental Laws: CERCLA: RQ 5000 lbs. NIOSH Recommendations: Occupational Health Guideline: 0072
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%):	TSCA Inventory: listed; UVCB TSCA HPVC: not listed
Butane:	TSCA Inventory: listed TSCA HPVC: not listed Clean Air Act: Accidental Release Prevention: Threshold 10000 lbs. / Basis for listing = f NIOSH Recommendations: Occupational Health Guideline: 0068*
Propane:	TSCA Inventory: listed TSCA HPVC: not listed Clean Air Act: Accidental Release Prevention: Threshold 10000 lbs. / Basis for listing = f NIOSH Recommendations: Occupational Health Guideline: 0524
Isobutane:	TSCA Inventory: listed TSCA HPVC: not listed Clean Air Act: Accidental Release Prevention: Threshold 10000 lbs. / Basis for listing = f NIOSH Recommendations: Occupational Health Guideline: 0350*

National regulations - U.S. State Regulations

n-Butyl acetate:

CAS# 123-86-4 can be found on the following state right to know lists:
- California, Massachusetts, Minnesota, New Jersey, Pennsylvania.

Butane:

Delaware Air Quality Management List:

DRQ: F 1000** - RQ State: State requirements differs from Federal
Massachusetts Haz. Substance codes: 4,5,6
Minnesota Haz. Substance:

Codes: A - Ratings: - - Status: Title III

New Jersey RTK Hazardous Substance:

DOT: 1011 - Sub No.: 0273 - TPQ: -

Pennsylvania Haz. Substance code: -

Washington Air Contaminant:

TWA: 800 ppm - 1900 mg

Propane:

California Proposition 65 code: -

Delaware Air Quality Management List:

DRQ: F 1000** - RQ State: State requirements differs from Federal
Massachusetts Haz. Substance codes: 2,4,5,6
Minnesota Haz. Substance:

Codes: AP - Ratings: - - Status: Title III

New Jersey RTK Hazardous Substance:

DOT: 1978 - Sub No.: 1594 - TPQ: -

Pennsylvania Haz. Substance code: -

Washington Air Contaminant:

TWA: 1000 ppm - 1800 mg

Isobutane:

California Proposition 65 code: -

Delaware Air Quality Management List:

DRQ: F 1000** - RQ State: State requirements differs from Federal
Massachusetts Haz. Substance codes: 6
New Jersey RTK Hazardous Substance:

DOT: 1969 - Sub No.: 1040 - TPQ: -

Pennsylvania Haz. Substance code: -

National regulations - Great Britain

Hazchem-Code: -

16. Other information

Text for labeling: Contains 10 - 20 % n-Pentane, 10 - 20 % n-Butyl acetate, < 1 % Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%), 30 - 50 % Butane, 10 - 20 % Propane, 10 - 20 % Isobutane. Safety data sheet available on request.

Hazard rating systems:

NFPA Hazard Rating:

Health: 2 (Moderate)

Fire: 4 (Severe)

Reactivity: 0 (Minimal)



HMIS Version III Rating:

Health: 2 (Moderate)

Flammability: 4 (Severe)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	2
FLAMMABILITY	4
PHYSICAL HAZARD	0

Date of first version:

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Department issuing data sheet

Contact person:

see section 1: Dept. responsible for information



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The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.