

SAFETY DATA SHEET

LA LMM-6000SPRAY		GSLA_LMM-6000 Black Aerosol Spray Can	
Product specification	RS_FP_603544	Revision Date	14.03.2023
Version	2.0	Print Date	16.03.2023
Material number	1130062	Page	Page 1 of 26

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

1.1 Product identifier

Product code : 1130062

Trade name : **LA LMM-6000SPRAY**
GSLA_LMM-6000 Black Aerosol Spray Can

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

Use of the Sub-
stance/Mixture : Decorative coating

1.3 Details of the supplier of the safety data sheet

Company : Ferro GmbH
Gutleutstraße 215
60327 Frankfurt am Main

Telephone : +4969271160

Telefax : +496927116333

E-mail address Respon-
sible/issuing person : sdb@ferro.com

1.4 Emergency telephone number

In-Country Number : 0-800-983-611

CHEMTREC Global Number : +(1)-703-527-3887 (Call Collect)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 1 H222: Extremely flammable aerosol.
H229: Pressurised container: May burst if heated.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Carcinogenicity, Category 2 H351: Suspected of causing cancer.

Specific target organ toxicity - single ex-
posure, Category 3, Respiratory system H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

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Hazard pictograms :



Signal word : Danger

Hazard statements :
H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
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.
P251 Do not pierce or burn, even after use.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Storage:

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Hazardous components which must be listed on the label:

Molybdenum(VI) oxide
ammonium metavanadate

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : inorganic metal-nonmetal compound
organic solvent
extremely flammable liquefied gas
silicatic material
hydrocarbon, aliphatic
inorganic salt

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)

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ethanol	64-17-5 200-578-6 603-002-00-5 01-2119457610-43-xxxx	Flam. Liq. 2; H225 Eye Irrit. 2; H319	>= 30 - < 50
Molybdenum(VI) oxide	1313-27-5 215-204-7 042-001-00-9 01-2119488038-30-xxxx	Eye Irrit. 2; H319 Carc. 2; H351 STOT SE 3; H335 (Respiratory system)	>= 20 - < 30
ammonium metavanadate	7803-55-6 232-261-3	Acute Tox. 3; H301 Acute Tox. 4; H332 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	>= 0.1 - < 10
ethyl acetate	141-78-6 205-500-4 607-022-00-5 01-2119475103-46-xxxx	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 (Central nervous system)	>= 0.1 - < 10
methanol	67-56-1 200-659-6 603-001-00-X 01-2119392409-28-xxxx	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370	>= 1 - < 3
2-butoxyethanol	111-76-2 203-905-0 603-014-00-0 01-2119475108-36-xxxx	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 0.1 - < 10
4-methylpentan-2-one	108-10-1 203-550-1 606-004-00-4	Flam. Liq. 2; H225 Acute Tox. 4; H332 Eye Irrit. 2; H319 Carc. 2; H351 STOT SE 3; H336 (Central nervous system)	>= 0.1 - < 1
Substances with a workplace exposure limit :			
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32-xxxx	Flam. Gas 1; H220 Press. Gas Liquefied gas; H280	>= 10 - < 20
mica	12001-26-2 310-127-6		>= 0.1 - < 10
Molybdenum(VI) oxide	1313-27-5 215-204-7 042-001-00-9 01-2119488038-30-xxxx	Eye Irrit. 2; H319 Carc. 2; H351 STOT SE 3; H335 (Respiratory system)	>= 20 - < 30
isobutane	75-28-5	Flam. Gas 1; H220	>= 1 - < 10

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	200-857-2 601-004-00-0 01-2119485395-27-xxxx	Press. Gas Liquefied gas; H280	
propane	74-98-6 200-827-9 601-003-00-5 01-2119486944-21-xxxx	Flam. Gas 1; H220 Press. Gas Liquefied gas; H280	$\geq 1 - < 10$
ammonium metavanadate	7803-55-6 232-261-3	Acute Tox. 3; H301 Acute Tox. 4; H332 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	$\geq 1 - < 3$
ethyl acetate	141-78-6 205-500-4 607-022-00-5 01-2119475103-46-xxxx	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 (Central nervous system)	$\geq 1 - < 3$
methanol	67-56-1 200-659-6 603-001-00-X 01-2119392409-28-xxxx	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370	$\geq 1 - < 3$
2-butoxyethanol	111-76-2 203-905-0 603-014-00-0 01-2119475108-36-xxxx	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319	$\geq 1 - < 3$
Substances with a workplace exposure limit :			
ethanol	64-17-5 200-578-6 603-002-00-5 01-2119457610-43-xxxx	Flam. Liq. 2; H225 Eye Irrit. 2; H319	$\geq 30 - < 50$
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32-xxxx	Flam. Gas 1; H220 Press. Gas Liquefied gas; H280	$\geq 10 - < 20$
mica	12001-26-2 310-127-6		$\geq 1 - < 10$

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Do not leave the victim unattended.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
- In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
If skin irritation persists, call a physician.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth immediately with plenty of water and seek medical advice.
Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

- Risks : Causes serious eye irritation.
May cause respiratory irritation.
Suspected of causing cancer.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

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5.2 Special hazards arising from the substance or mixture

Hazardous combustion products : No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Use a water spray to cool fully closed containers.
For safety reasons in case of fire, cans should be stored separately in closed containments.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean contaminated floors and objects thoroughly while observing environmental regulations.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid release to the environment.
Do not breathe vapours/dust.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national

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regulations.

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Do not spray on a naked flame or any incandescent material.

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects. No smoking. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
ethanol	64-17-5	OEL- RL STEL/C	2,000 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
Molybdenum(VI) oxide	1313-27-5	OEL-RL (respirable dust fraction)	1 mg/m ³ (Molybdenum)	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
butane	106-97-8	OEL- RL STEL/C	2,000 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
mica	12001-26-2	OEL-RL (respirable dust fraction)	6 mg/m ³	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
ethyl acetate	141-78-6	TWA	200 ppm 734 mg/m ³	2017/164/EU

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		Further information: Indicative		
		STEL	400 ppm 1,468 mg/m3	2017/164/EU
		Further information: Indicative		
		OEL-RL	800 ppm	ZA OEL
		Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents		
		TWA	200 ppm 734 mg/m3	2017/164/EU
		STEL	400 ppm 1,468 mg/m3	2017/164/EU
methanol	67-56-1	TWA	200 ppm 260 mg/m3	2006/15/EC
		Further information: Indicative, Identifies the possibility of significant uptake through the skin		
		OEL-RL	400 ppm	ZA OEL
		Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents		
		OEL- RL STEL/C	500 ppm	ZA OEL
		Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents		
		TWA	200 ppm 260 mg/m3	2006/15/EC
2-butoxyethanol	111-76-2	TWA	20 ppm 98 mg/m3	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		STEL	50 ppm 246 mg/m3	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		OEL- ML	40 ppm	ZA OEL
		Further information: Occupational Exposure Limits - Maximum Limits For Hazardous Chemical Agents		
		TWA	20 ppm 98 mg/m3	2000/39/EC
		STEL	50 ppm 246 mg/m3	2000/39/EC
4-methylpentan-2-one	108-10-1	TWA	20 ppm 83 mg/m3	2000/39/EC
		Further information: Indicative		
		STEL	50 ppm 208 mg/m3	2000/39/EC
		Further information: Indicative		
		OEL-RL	40 ppm	ZA OEL
		Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents, denotes carcinogenicity, which is based on GHS categorisation, including category 1A, 1B		
		OEL- RL STEL/C	150 ppm	ZA OEL
		Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents, denotes carcino-		

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		genicity, which is based on GHS categorisation, including category 1A, 1B		
		TWA	20 ppm 83 mg/m ³	2000/39/EC
		STEL	50 ppm 208 mg/m ³	2000/39/EC
ethanol	64-17-5	OEL- RL STEL/C	2,000 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
butane	106-97-8	OEL- RL STEL/C	2,000 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
mica	12001-26-2	OEL-RL (respirable dust fraction)	6 mg/m ³	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
ethyl acetate	141-78-6	TWA	200 ppm 734 mg/m ³	2017/164/EU
	Further information: Indicative			
		STEL	400 ppm 1,468 mg/m ³	2017/164/EU
	Further information: Indicative			
		OEL-RL	800 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		TWA	200 ppm 734 mg/m ³	2017/164/EU
		STEL	400 ppm 1,468 mg/m ³	2017/164/EU
methanol	67-56-1	TWA	200 ppm 260 mg/m ³	2006/15/EC
	Further information: Indicative, Identifies the possibility of significant uptake through the skin			
		OEL-RL	400 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		OEL- RL STEL/C	500 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		TWA	200 ppm 260 mg/m ³	2006/15/EC
2-butoxyethanol	111-76-2	TWA	20 ppm 98 mg/m ³	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	50 ppm 246 mg/m ³	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		OEL- ML	40 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Maximum Limits For Hazardous Chemical Agents			

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	TWA	20 ppm 98 mg/m ³	2000/39/EC
	STEL	50 ppm 246 mg/m ³	2000/39/EC

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
methanol	67-56-1	Methanol: 15 mg/l (Urine)	End of shift	ZA BEI
2-butoxyethanol	111-76-2	Butoxyacetic acid (BAA): 200 mg/g Creatinine (Urine)	End of shift	ZA BEI
4-methylpentan-2-one	108-10-1	Methyl isobutyl ketone (MIBK): 1 mg/l (Urine)	End of shift	ZA BEI
methanol	67-56-1	Methanol: 15 mg/l (Urine)	End of shift	ZA BEI

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
ethanol	Workers	Inhalation	Long-term systemic effects	950 mg/m ³
	Workers	Dermal	Long-term systemic effects	343 mg/kg bw/day
2-butoxyethanol	Workers	Inhalation	Long-term systemic effects	98 mg/m ³
	Workers	Inhalation	Acute systemic effects	1091 mg/m ³
	Workers	Dermal	Long-term systemic effects	125 mg/kg bw/day
	Workers	Dermal	Acute systemic effects	89 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
ethanol	Fresh water	0.96 mg/l
	Marine water	0.79 mg/l
	Fresh water sediment	3.6 mg/kg dry weight (d.w.)
	Marine sediment	2.9 mg/kg dry weight (d.w.)
	Soil	0.63 mg/kg dry weight (d.w.)
	Sewage treatment plant	580 mg/l
2-butoxyethanol	Fresh water	8.8 mg/l
	Marine water	0.88 mg/l
	Sewage treatment plant	463 mg/l
	Fresh water sediment	34.6 mg/kg dry weight (d.w.)

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	Marine sediment	3.46 mg/kg dry weight (d.w.)
	Soil	2.33 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment

- Eye protection : Ensure that eyewash stations and safety showers are close to the workstation location.
Tightly fitting safety goggles
- Hand protection : Wear protective gloves, for example: polyvinyl alcohol or nitrile-butyl-rubber gloves, or similar; Glove thickness: > 0.4 mm and Break Through time: > 480 minutes. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Before removing gloves clean them with soap and water.
- Skin and body protection : Impervious clothing
- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Equipment should conform to EN 143
- Filter type : Particulates type (P)
- Protective measures : Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Physical state : aerosol
- Colour : black
- Odour : characteristic
- Odour Threshold : No data available
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Flammability : No data available
- Upper explosion limit / Upper : 19 %(V)

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flammability limit

Lower explosion limit / Lower
flammability limit : 1.1 %(V)

Flash point : 14 °C

Auto-ignition temperature : not determined

Decomposition temperature : No data available

pH : No data available

Viscosity
Viscosity, kinematic : No data available

Solubility(ies)
Water solubility : soluble

Solubility in other solvents : No data available

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

Vapour pressure : No data available

Relative density : No data available

Bulk density : No data available

Relative vapour density : No data available

9.2 Other information

Explosives : No data available

Oxidizing properties : No data available

Flammable solids
Burning rate : No data available

Self-ignition : No data available

Evaporation rate : No data available

Refractive index : No data available

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SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Not applicable

10.6 Hazardous decomposition products

Stable under normal conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

ethanol:

Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg

ammonium metavanadate:

Acute oral toxicity : LD50 (Rat, male and female): 275.87 mg/kg

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Method: OECD Test Guideline 401
GLP: yes
Remarks: Toxic if swallowed.

Acute toxicity estimate: 275.87 mg/kg
Method: Calculation method

ethyl acetate:

Acute oral toxicity : LD50 Oral (Rat): 6,100 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

methanol:

Acute dermal toxicity : Acute toxicity estimate: 300 mg/kg
Method: Converted acute toxicity point estimate

2-butoxyethanol:

Acute oral toxicity : Acute toxicity estimate: 1,200 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LD50 Oral (Rat, male and female): 1,746 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 Dermal (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

4-methylpentan-2-one:

Acute inhalation toxicity : Acute toxicity estimate: 11 mg/l
Test atmosphere: vapour
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

butane:

Acute inhalation toxicity : LC50 (Rat, male and female): 658 g/m³
Exposure time: 4 h
Test atmosphere: gas
Assessment: The substance or mixture has no acute inhalation toxicity

ammonium metavanadate:

Acute oral toxicity : LD50 (Rat, male and female): 275.87 mg/kg
Method: OECD Test Guideline 401
GLP: yes
Remarks: Toxic if swallowed.

Acute toxicity estimate: 275.87 mg/kg

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Method: Calculation method

ethyl acetate:

Acute oral toxicity : LD50 Oral (Rat): 6,100 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

methanol:

Acute dermal toxicity : Acute toxicity estimate: 300 mg/kg
Method: Converted acute toxicity point estimate

2-butoxyethanol:

Acute oral toxicity : Acute toxicity estimate: 1,200 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LD50 Oral (Rat, male and female): 1,746 mg/kg
Method: OECD Test Guideline 401
GLP: no

Acute dermal toxicity : LD50 Dermal (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

ethanol:

Acute dermal toxicity : LD50 (Rabbit): 15,800 mg/kg

butane:

Acute inhalation toxicity : LC50 (Rat, male and female): 658 g/m³
Exposure time: 4 h
Test atmosphere: gas
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

ethanol:

Species : Rabbit
Exposure time : 24 h
Method : OECD Test Guideline 404
Result : No skin irritation

Molybdenum(VI) oxide:

Species : Rabbit
Exposure time : 4 h

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Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

2-butoxyethanol:

Species : Rabbit
Exposure time : 72 h
Method : OECD Test Guideline 404
Result : Irritating to skin.
GLP : yes

Molybdenum(VI) oxide:

Species : Rabbit
Exposure time : 4 h
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

2-butoxyethanol:

Species : Rabbit
Exposure time : 72 h
Method : OECD Test Guideline 404
Result : Irritating to skin.
GLP : yes

ethanol:

Species : Rabbit
Exposure time : 24 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

ethanol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Eye irritation

Molybdenum(VI) oxide:

Species : Rabbit
Assessment : Irritating to eyes.
Result : Irritating to eyes.

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ammonium metavanadate:

Species : Rabbit
Exposure time : 1 h
Method : OECD Test Guideline 405
Result : Irritating to eyes.
GLP : yes

ethyl acetate:

Species : Rabbit
Result : No eye irritation

2-butoxyethanol:

Result : Eye irritation

Molybdenum(VI) oxide:

Species : Rabbit
Assessment : Irritating to eyes.
Result : Irritating to eyes.

ammonium metavanadate:

Species : Rabbit
Exposure time : 1 h
Method : OECD Test Guideline 405
Result : Irritating to eyes.
GLP : yes

ethyl acetate:

Species : Rabbit
Result : No eye irritation

2-butoxyethanol:

Result : Eye irritation

ethanol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

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Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

May cause respiratory irritation.

Components:

ammonium metavanadate:

Assessment : May cause respiratory irritation.

ammonium metavanadate:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

SECTION 12: Ecological information

12.1 Toxicity

Components:

ethanol:

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia (water flea)): 9,268 mg/l
Exposure time: 48 h

Molybdenum(VI) oxide:

Toxicity to fish : (Pimephales promelas (fathead minnow)): 370 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility

ammonium metavanadate:

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

ethyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 220 mg/l

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Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 560 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): 3,300 mg/l
Exposure time: 48 h

methanol:

Toxicity to fish : LC50 (Fish): 28,200 mg/l
Exposure time: 96 h

2-butoxyethanol:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,490 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,800 mg/l
Exposure time: 48 h

Molybdenum(VI) oxide:

Toxicity to fish : (Pimephales promelas (fathead minnow)): 370 mg/l
Exposure time: 96 h
Remarks: No toxicity at the limit of solubility

ammonium metavanadate:

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

ethyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 220 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 560 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): 3,300 mg/l
Exposure time: 48 h

methanol:

Toxicity to fish : LC50 (Fish): 28,200 mg/l
Exposure time: 96 h

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2-butoxyethanol:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,490 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: no

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,800 mg/l
aquatic invertebrates Exposure time: 48 h

ethanol:

Toxicity to daphnia and other : LC50 (Daphnia (water flea)): 9,268 mg/l
aquatic invertebrates Exposure time: 48 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Components:

ethanol:

Partition coefficient: n- : log Pow: -0.349 (24 °C)
octanol/water

ethyl acetate:

Partition coefficient: n- : log Pow: 0.73 (20 °C)
octanol/water

methanol:

Partition coefficient: n- : log Pow: -0.77
octanol/water

2-butoxyethanol:

Partition coefficient: n- : log Pow: 0.77 (20 °C)
octanol/water pH: 7

4-methylpentan-2-one:

Partition coefficient: n- : Pow: 1.19
octanol/water

butane:

Partition coefficient: n- : log Pow: 2.745
octanol/water

ethyl acetate:

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Partition coefficient: n-octanol/water : log Pow: 0.73 (20 °C)

methanol:

Partition coefficient: n-octanol/water : log Pow: -0.77

2-butoxyethanol:

Partition coefficient: n-octanol/water : log Pow: 0.77 (20 °C)
pH: 7

ethanol:

Partition coefficient: n-octanol/water : log Pow: -0.349 (24 °C)

butane:

Partition coefficient: n-octanol/water : log Pow: 2.745

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Additional ecological information : None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Send to a licensed waste management company.

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Dispose of wastes in an approved waste disposal facility.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

14.1 UN number

ADR : UN 1950
IMDG : UN 1950
IATA : UN 1950

14.2 UN proper shipping name

ADR : AEROSOLS, FLAMMABLE, AEROSOLS
IMDG : AEROSOLS
IATA : Aerosols, flammable

14.3 Transport hazard class(es)

ADR : 2
IMDG : 2.1
IATA : 2.1

14.4 Packing group

ADR
Packing group : Not assigned by regulation
Classification Code : 5F
Labels : 2.1
Tunnel restriction code : (D)

IMDG
Packing group : Not assigned by regulation
Labels : 2.1
EmS Code : F-D, S-U

IATA (Cargo)

Packing instruction (cargo aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

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IATA (Passenger)

Packing instruction (passenger aircraft) : 203
Packing instruction (LQ) : Y203
Packing group : Not assigned by regulation
Labels : Flammable Gas

14.5 Environmental hazards

ADR

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: methanol (Number on list 69)

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors : Neither banned nor restricted

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Neither banned nor restricted

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Neither banned nor restricted

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Neither banned nor restricted

Seveso III: Directive 2012/18/EU of the Euro- P3a FLAMMABLE AEROSOLS

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pean Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

18 Liquefied extremely flammable gases (including LPG) and natural gas

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

- TCSI (Taiwan) : On the inventory, or in compliance with the inventory
- TSCA (United States) : All substances listed as active on the TSCA inventory
- AIRC (Australia) : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL/NDSL (Canada) : All components of this product are on the Canadian DSL
- ENCS (Japan) : Not in compliance with the inventory
- ISHL (Japan) : Not in compliance with the inventory
- PICCS (Philippines) : On the inventory, or in compliance with the inventory
- IECSC (China) : On the inventory, or in compliance with the inventory
- SWISS (Switzerland) : On the inventory, or in compliance with the inventory
- EINECS (European Union) : On the inventory, or in compliance with the inventory
- CICR (Turkey) : Not in compliance with the inventory
- TECI (Thailand) : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

Not applicable

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SECTION 16: Other information

Full text of H-Statements

H220	: Extremely flammable gas.
H225	: Highly flammable liquid and vapour.
H280	: Contains gas under pressure; may explode if heated.
H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H331	: Toxic if inhaled.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H351	: Suspected of causing cancer.
H370	: Causes damage to organs.
EUH066	: Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Carc.	: Carcinogenicity
Eye Irrit.	: Eye irritation
Flam. Gas	: Flammable gases
Flam. Liq.	: Flammable liquids
Press. Gas	: Gases under pressure
Skin Irrit.	: Skin irritation
STOT SE	: Specific target organ toxicity - single exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2006/15/EC	: Europe. Indicative occupational exposure limit values
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
ZA BEI	: South Africa. The Regulations for Hazardous Chemical Agents, Biological Exposure Indices
ZA OEL	: South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
2006/15/EC / TWA	: Limit Value - eight hours
2017/164/EU / STEL	: Short term exposure limit
2017/164/EU / TWA	: Limit Value - eight hours
ZA OEL / OEL- ML	: Occupational Exposure Limit Maximum limit - 8- hour exposure or equivalent (12 hour shifts).
ZA OEL / OEL-RL	: Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)
ZA OEL / OEL- RL STEL/C	: Occupational Exposure Limit Restricted limit - Short term occupational exposure limits / ceiling limits

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Test-

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ing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Aerosol 1	H222, H229
Eye Irrit. 2	H319
Carc. 2	H351
STOT SE 3	H335

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ZA / EN