



PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Issue date: 20-9-2018 Revision date: 8-7-2020 Supersedes: 6-5-2019 Version: 2.1

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

1.1. Product identifier

Product form : Mixture
Trade name : PTO MoS2
Product code : 09.20.09
Vaporizer : Aerosol
Product group : Trade product

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Industrial use, Professional use, Consumer use
Use of the substance/mixture : Lubricating agent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Kroon Oil BV
Dollegoorweg 15
7602 EC Almelo - Netherlands
T 0031 (0)546 81 81 65
vib@kroon-oil.nl

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Aerosol, Category 1 H222;H229
Aspiration hazard, Category 1 H304
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Pressurised container: May burst if heated. Extremely flammable aerosol. May be fatal if swallowed and enters airways.

2.2. Label elements

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

Hazard pictograms (CLP) :



PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

	GHS02
Signal word (CLP)	: Danger
Hazard statements (CLP)	: H222 - Extremely flammable aerosol. H229 - Pressurised container: May burst if heated.
Precautionary statements (CLP)	: P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. 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. P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
EUH-statements	: EUH066 - Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butane (containing < 0,1% butadiene (203-450-8)) substance with national workplace exposure limit(s) (GB, IE) (Note C)(Note U)	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (EC Index-No.) 601-004-00-0 (REACH-no) 01-2119474691-32	25 – 50	Flam. Gas 1A, H220 Press. Gas (Comp.), H280
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics, benzene <0,1%	(CAS-No.) (1174522-09-8) (EC-No.) 918-481-9 (REACH-no) 01-2119457273-39	25 – 50	Asp. Tox. 1, H304
Propane substance with a Community workplace exposure limit substance with national workplace exposure limit(s) (IE) (Note U)	(CAS-No.) 74-98-6 (EC-No.) 200-827-9 (EC Index-No.) 601-003-00-5 (REACH-no) 01-2119486944-21	2,5 – 10	Flam. Gas 1A, H220 Press. Gas (Comp.), H280
isobutane (containing < 0,1% butadiene (203-450-8)) substance with national workplace exposure limit(s) (IE)	(CAS-No.) 75-28-5 (EC-No.) 200-857-2 (REACH-no) 01-2119485395-27	2,5 – 10	Flam. Gas 1A, H220 Press. Gas (Comp.), H280

Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Note U (Table 3): When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case.

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

First-aid measures after ingestion : Do not induce vomiting. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after skin contact : Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after ingestion : May result in aspiration into the lungs, causing chemical pneumonia. Risk of lung oedema.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustible liquid. Extremely flammable aerosol.
Explosion hazard : Pressurised container: May burst if heated.
Hazardous decomposition products in case of fire : Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. 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.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store locked up. Store in a well-ventilated place. Keep cool.
Storage temperature	: < 40 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PTO MoS2	
EU - Occupational Exposure Limits	
Exposure limits/standards for materials that can be formed when handling this product. When mists/aerosols can occur the following is recommended	5 mg/m ³ - ACGIH TLV (inhalable fraction).

butane (containing < 0,1% butadiene (203-450-8)) (106-97-8)	
Ireland - Occupational Exposure Limits	
Local name	Butane, all isomers: Butane
OEL (15 min ref) (ppm)	1000 ppm
Regulatory reference	Chemical Agents Code of Practice 2020
United Kingdom - Occupational Exposure Limits	
Local name	Butane
WEL TWA (mg/m ³)	1450 mg/m ³
WEL TWA (ppm)	600 ppm
WEL STEL (mg/m ³)	1810 mg/m ³
WEL STEL (ppm)	750 ppm
Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage, only applies if Butane contains more than 0.1% of buta-1,3-diene)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Propane (74-98-6)	
EU - Occupational Exposure Limits	
IOELV TWA (ppm)	1000 ppm
Ireland - Occupational Exposure Limits	
Local name	Aliphatic hydrocarbon gases Alkanes (C1-C3): Propane
Notes (IE)	Asphx. (Gaseous chemical substances which may not produce significant physiological effects in the exposed employee, but when present in high concentrations will act as simple asphyxiants)
Regulatory reference	Chemical Agents Code of Practice 2020

isobutane (containing < 0,1% butadiene (203-450-8)) (75-28-5)	
Ireland - Occupational Exposure Limits	
Local name	Butane, all isomers: Isobutane

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

OEL (15 min ref) (ppm)	1000 ppm
Regulatory reference	Chemical Agents Code of Practice 2020

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:					
Protective gloves					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	≥ 0.35		EN ISO 374

Eye protection:			
Safety glasses			
Type	Use	Characteristics	Standard
Safety glasses	Droplet	clear	EN 166

Skin and body protection:	
Wear suitable protective clothing	

Respiratory protection:			
In case of insufficient ventilation, wear suitable respiratory equipment			
Device	Filter type	Condition	Standard
Self-contained breathing apparatus (SCBA)	Type AX - Low-boiling (<65 °C) organic compounds, Type P2		

Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Aerosol.
Colour	: Light grey.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: -44,5 °C
Flash point	: -60 °C
Critical temperature	: 236 °C

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Extremely flammable aerosol.
Vapour pressure	: 2100 hPa @20°C
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0,695 g/cm ³ at 20 °C
Solubility	: Water: Practically not miscible
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: < 20,5 mm ² /s
Viscosity, dynamic	: No data available
Explosive properties	: Pressurised container: May burst if heated.
Oxidising properties	: No data available
Lower explosive limit (LEL)	: 0,7 vol %
Upper explosive limit (UEL)	: 8,5

9.2. Other information

VOC content : 487,2 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol. Pressurised container: May burst if heated.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts violently with (strong) oxidizers.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics, benzene <0,1% ((1174522-09-8))

LD50 oral rat	> 5000 mg/kg (OESO 401)
LD50 dermal rabbit	> 3160 mg/kg (OESO 402)
LC50 inhalation rat (mg/l)	> 4,951 g/m ³ (4h, OESO 403)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.

PTO MoS2	
Vaporizer	Aerosol
Viscosity, kinematic	< 20,5 mm ² /s

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
Not rapidly degradable	

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics, benzene <0,1% ((1174522-09-8))	
LC50 fish	> 1001 mg/l (OECD 203 method)
EC50 Daphnia	> 1000 mg/l (OECD 202 method)
EC50 72h algae (1)	W 1000 mg/l (OECD 201 method)
ErC50 (algae)	1000 mg/l (Pseudokirchneriella subcapitata, EL0, 72h)

12.2. Persistence and degradability

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics, benzene <0,1% ((1174522-09-8))	
Persistence and degradability	Readily biodegradable.
Biodegradation	80 % (28d)

12.3. Bioaccumulative potential

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics, benzene <0,1% ((1174522-09-8))	
Partition coefficient n-octanol/water (Log Pow)	5,57 – 6,62

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
HP Code : HP3 - "Flammable:"
— flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and ≤ 75 °C;
— flammable pyrophoric liquid and solid waste: solid or liquid waste which, even in small quantities, is liable to ignite within five minutes after coming into contact with air;
— flammable solid waste: solid waste which is readily combustible or may cause or contribute to fire through friction;
— flammable gaseous waste: gaseous waste which is flammable in air at 20 °C and a standard pressure of 101.3 kPa;
— water reactive waste: waste which, in contact with water, emits flammable gases in dangerous quantities;
— other flammable waste: flammable aerosols, flammable self-heating waste, flammable organic peroxides and flammable self-reactive waste.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 1950	UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping name				
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS
Transport document description				
UN 1950 AEROSOLS, 2.1, (D)	UN 1950 AEROSOLS, 2.1	UN 1950 Aerosols, flammable, 2.1	UN 1950 AEROSOLS, 2.1	UN 1950 AEROSOLS, 2.1
14.3. Transport hazard class(es)				
2.1	2.1	2.1	2.1	2.1
				
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : 5F
Special provisions (ADR) : 190, 327, 344, 625
Limited quantities (ADR) : 1I
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P207
Special packing provisions (ADR) : PP87, RR6, L2

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Mixed packing provisions (ADR)	: MP9
Transport category (ADR)	: 2
Special provisions for carriage - Packages (ADR)	: V14
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV9, CV12
Special provisions for carriage - Operation (ADR)	: S2
Tunnel restriction code (ADR)	: D

Transport by sea

Special provisions (IMDG)	: 63, 190, 277, 327, 344, 381, 959
Packing instructions (IMDG)	: P207, LP200
Special packing provisions (IMDG)	: PP87, L2
EmS-No. (Fire)	: F-D
EmS-No. (Spillage)	: S-U
Stowage category (IMDG)	: None
Stowage and handling (IMDG)	: SW1, SW22
Segregation (IMDG)	: SG69

Air transport

PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Y203
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 203
PCA max net quantity (IATA)	: 75kg
CAO packing instructions (IATA)	: 203
CAO max net quantity (IATA)	: 150kg
Special provisions (IATA)	: A145, A167, A802
ERG code (IATA)	: 10L

Inland waterway transport

Classification code (ADN)	: 5F
Special provisions (ADN)	: 190, 327, 344, 625
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01, VE04
Number of blue cones/lights (ADN)	: 1

Rail transport

Classification code (RID)	: 5F
Special provisions (RID)	: 190, 327, 344, 625
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P207, LP200
Special packing provisions (RID)	: PP87, RR6, L2
Mixed packing provisions (RID)	: MP9
Transport category (RID)	: 2
Special provisions for carriage – Packages (RID)	: W14
Special provisions for carriage - Loading, unloading and handling (RID)	: CW9, CW12
Colis express (express parcels) (RID)	: CE2
Hazard identification number (RID)	: 23

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 487,2 g/l
Child-resistant fastening : Not applicable
Tactile warning : Not applicable

Directive 2012/18/EU (SEVESO III)

Seveso III Part I (Categories of dangerous substances)	Qualifying quantity (tonnes)	
	Lower-tier	Upper-tier
P3a FLAMMABLE AEROSOLS 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids Category 1	150	500

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:			
Section	Changed item	Change	Comments
9.1	Critical temperature	Added	
9.2	VOC content	Modified	
13.1	H code	Added	
15.1	VOC content	Modified	
16	Abbreviations and acronyms	Modified	

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration

PTO MoS2

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
vPvB	Very Persistent and Very Bioaccumulative
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
EC-No.	European Community number
EN	European Standard
OEL	Occupational Exposure Limit
SDS	Safety Data Sheet
WGK	Water Hazard Class

Full text of H- and EUH-statements:	
Asp. Tox. 1	Aspiration hazard, Category 1
EUH066	
Flam. Gas 1A	Flammable gases, Category 1A
Press. Gas (Comp.)	Gases under pressure : Compressed gas
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
EUH066	Repeated exposure may cause skin dryness or cracking.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.