福建沃尔法化学科技有限公司
Fujian Wolfa Chemical Technology Co., Ltd

DESIGN REPORT OF SAFETY DATA SHEET

Revision Date: Sep. 17, 2025

Name of the sample	MOLYBDENUM HEXACARBONYL
Applicant	Fujian Wolfa Chemical Technology Co., Ltd.
Supplier	Fujian Wolfa Chemical Technology Co., Ltd.
Composition of the sample	MOLYBDENUM HEXACARBONYL: ≥99%
Warranty of Design	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Eleventh revised edition
Design Result of SDS please see next page.	

Notes: This SDS is valid before the implementation of the Twelfth revised edition GHS.

Section 1 Product and Company Identification

> Product identifier

Product Name	MOLYBDENUM HEXACARBONYL
Synonyms	——
CAS No.	13939-06-5
EC No.	237-713-3
Molecular Formula	C_6O_6Mo

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

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the supplier of the safety data sheet

Applicant Name	Fujian Wolfa Chemical Technology Co., Ltd.
Application Address	Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province
Applicant Post Code	362000
Applicant Telephone	+86 18050950397
Applicant Fax	——
Applicant E-mail	——
Supplier Name	Fujian Wolfa Chemical Technology Co., Ltd.
Supplier Address	Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province
Supplier Post Code	362000
Supplier Telephone	+86 18050950397
Supplier Fax	——
Supplier E-mail	——

> Emergency phone number

Emergency Phone Number	+86 18050950397

Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the eleventh revised edition):

> Hazard classification according to GHS

Acute Toxicity – Inhalation	Category 2
Acute Toxicity – Oral	Category 2
Acute Toxicity – Deraml	Category 2

> Label elements

Pictogram



Signal Word Danger

> Hazard statements

H300	Fatal if swallowed
H310	Fatal in contact with skin
H330	Fatal if inhaled

> Precautionary statements

Prevention

P262	Do not get in eyes, on skin, or on clothing.
P264	Wash face, hands and any exposed skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P330	Rinse mouth.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.

Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

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Section 3 Composition/Information on Ingredients

Component	CAS No.	EC No.	Concentration (weight percent, %)
MOLYBDENUM HEXACARBONYL	13939-06-5	237-713-3	⩾99

Section 4 First Aid Measures

> Description of first aid measures

General Advice Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Skin Contact Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable.

Ingestion Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Inhalation Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

Protecting of first-aiders Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most important symptoms and effects, both acute and delayed

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of any immediate medical attention and special treatment needed

1 Treat symptomatically.

2 Symptoms may be delayed.

Section 5 Fire Fighting Measures

> Extinguishing media

Suitable Extinguishing Media Dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter or spread fire.

> Specific hazards arising from the substance or mixture

1 Carbon oxides .

2 Molybdenum oxides .

3 Not combustible..

4 Ambient fire may liberate hazardous vapours.

> Advice for firefighters

1 As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.

2 Fight fire from a safe distance, with adequate cover.

3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 Accidental Release Measure

> Personal precautions, protective equipment and emergency procedures

1 Fully encapsulating,vapor protective clothing should be worn for spills and leaks with no fire.

2 Do not touch or walk through spilled material.

3 Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

4 Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

5 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6 Use personal protective equipment.do not breathe dust/fume.

> Environmental precautions

1 Prevent further leakage or spillage if safe to do so.

2 Discharge into the environment must be avoided.

> Methods and materials for containment and cleaning up

1 Isolation of contaminated areas and restrictions on access.

2 It is recommended that emergency personnel wear dust masks and wear anti-virus suits.

3 Do not touch broken containers and spills before putting on appropriate protective clothing.

4 Cover the spill with a plastic sheet to reduce scattering.

5 Cut off the source of the leak as much as possible.

6 Keep leaks in a ventilated place.

7 It is recommended that emergency personnel wear dust masks.

8 Collect the spill with a clean shovel and place it in a clean, dry, loosely closed container and move the container away from the leak.

9 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

Section 7 Handling and Storage

> Precautions for Handling

1 Handling is performed in a well ventilated place.

2 Wear suitable protective equipment.

3 Avoid contact with skin and eyes.

4 Keep away from heat/sparks/open flames/ hot surfaces.

> Precautions for Storage

1 Keep containers tightly closed.

2 Keep containers in a dry, cool and well-ventilated place.

3 Keep away from heat/sparks/open flames/ hot surfaces.

Section 8 Exposure Controls/Personal Protection

> Control Parameters

Occupational Exposure Limit Values

No relevant regulations

Biological Limit Values

No relevant regulations

Monitoring Methods

EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

GBZ/T 300 series standard Determination of toxic substances in workplace air.

> Engineering Controls

1 Ensure adequate ventilation, especially in confined areas.

2 Ensure that eyewash stations and safety showers are close to the workstation location.

3 Use explosion-proof electrical/ventilating/lighting/equipment.

4 Set up emergency exit and necessary risk-elimination area.

> Personal Protection Equipment

Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear appropriate chemical protective gloves.
Skin and body protection	Must wear appropriate chemical protective clothing and chemical resistant shoes.
Respiratory protection	Must wear appropriate personal dust proof gas mask.

Section 9 Physical and Chemical Properties

Appearance: White crystal powder

Odor: No information available

Odor Threshold: No information available

pH: No information available

Melting Point/Freezing Point (℃): 150

Initial Boiling Point and Boiling Range (℃): 155

Flash Point (℃)(Closed Cup): Not applicable

Evaporation Rate: Not applicable

Flammability: No information available

Upper/lower explosive limits[%(v/v)]: Upper limit：No information available；Lower limit：No information available

Vapor Pressure (KPa): 0.013Kpa

Relative Vapour Density(Air=1): 9.1

Relative Density(Water=1): 1.96 (20℃)

Solubility: Insoluble in water

n-Octanol/Water Partition Coefficient: No information available

Auto-Ignition Temperature(℃): No information available

Decomposition Temperature (℃): No information available

Kinematic Viscosity (mm^2/s): Not applicable

Particle characteristics: No information available

Critical Temperature(℃): Not applicable

Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	No information available.
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials Hazardous	Non-metallic oxides and halogen.
Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 Toxicological Information

> Acute Toxicity

Based on available data, the classification criteria are not met

> Skin Corrosion/Irritation

Based on available data, the classification criteria are not met

> Serious Eye Damage/Irritation

Based on available data, the classification criteria are not met

> Skin Sensitization

Based on available data, the classification criteria are not met

> Respiratory Sensitization

Based on available data, the classification criteria are not met

> Germ Cell Mutagenicity

Based on available data, the classification criteria are not met

> Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	13939-06-5	MOLYBDENUM HEXACARBONYL	Not Listed	Not Listed

> Reproductive Toxicity

Based on available data, the classification criteria are not met

> Reproductive Toxicity (Additional)

Based on available data, the classification criteria are not met

> STOT-Single Exposure

Based on available data, the classification criteria are not met

> STOT-Repeated Exposure

Based on available data, the classification criteria are not met

> Aspiration Hazard

Based on available data, the classification criteria are not met

Section 12 Ecological Information

> Acute Aquatic Toxicity

No information available

> Chronic Aquatic Toxicity

No information available

> Others

Persistence and degradability	No information available
Bioaccumulation or bioaccumulation	No information available
Migration in soils	No information available
Outcome review of PBT and vPvB	Insufficient information, temporarily unable to evaluate

Section 13 Disposal Considerations

Waste Chemicals	Before disposal should refer to the relevant national and local laws and regulation.Recommend the use of incineration disposal.
Contaminated Packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Recommendations	Refer to Waste chemicals and Contaminated packaging.

Section 14 Transport Information

Transporting Label



Marine pollutant No

UN Number	3466
UN Proper Shipping Name	METAL CARBONYLS,SOLID,N.O.S.
Transport Hazard Class	6.1
Transport Subsidiary Hazard Class	NONE
Packing Group	II

Section 15 Regulatory Information

> Regulatory Information

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECL	AIIC	ENCS
MOLYBDENUM HEXACARBONYL	√	√	×	√	√	×	√	√	×

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 Toxic Substances Control Act Inventory (United States)

【DSL】 Domestic Substances List (Canada)

【IECSC】 Inventory of Existing Chemical Substances in China

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECL】 Korean Existing Chemicals List

【AIIC】 Australian Inventory of Industrial Chemicals

【ENCS】 Existing and New Chemical Substances (Japan)

Note

"√" Indicates that the substance included in the regulations

"×" That no data or included in the regulations

Section 16 Additional Information

Preparation Date	Dec.1,2022
Revision Date	Sep.17,2025
Revision Reason	SDS Update Section

Disclaimer

The information provided in this Safety Data Sheet is correct based on the latest knowledge, information and concepts available to us. The information provided is intended only as a guide for safe operation, use, processing, storage, transportation, disposal and discharge and is not intended as a guarantee or specification of quality. This information is only used for the specific substance specified and may not be suitable for mixing with any other substance or in all cases, unless otherwise specified in the context.

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