

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Issue date: 3/17/2023 Version: 1.1

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

#### 1.1. Product identifier

Product form : Substance

Trade name : Ammonium heptamolybdate.4aq a.r.

EC-No. : 234-722-4 CAS-No. : 12054-85-2 Product code : CL00.0135

Type of product : Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry

state only

Formula : (NH4)6Mo7O24.4H2O

: ammonium heptamolybdate, tetrahydrate / ammonium molybdate Synonyms

(=hexaammoniumheptamolybdate), tetrahydrate / ammonium molybdate(VI)

(=hexaammoniumheptamolybdate), tetrahydrate / ammonium

paramolybdate(=hexaammonium molybdate), tetrahydrate / hexaammonium

heptamolybdate, tetrahydrate / molybdate, hexaammonium, tetrahydrate / molybdic acid (H6Mo7O24), hexaammonium salt, tetrahydrate / molybdic acid, hexaammonium salt,

tetrahydrate

BIG No 15867

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

#### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

#### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Chem-Lab nv Industriezone 'De arend 2' Zedelgem - Belgium Belgium

T+32 50 288320

info@chem-lab.be - https://www.chem-lab.be

## 1.4. Emergency telephone number

**Emergency number** : +32 50 28 83 20

## **SECTION 2: Hazards identification**

## 2.1. Classification of the substance or mixture

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

Not classified

### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

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

No labelling applicable

## 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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## **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Substance type : Mono-constituent

Name	Product identifier		Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ammonium heptamolybdate.4aq a.r.	CAS-No.: 12054-85-2 EC-No.: 234-722-4	100	Not classified

#### 3.2. Mixtures

Not applicable

#### **SECTION 4: First aid measures**

### 4.1. Description of first aid measures

First-aid measures general : If you feel unwell, consult a doctor/medical service.

First-aid measures after inhalation : Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical

service.

First-aid measures after skin contact : If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm)

water.

First-aid measures after eye contact : Rinse immediately with (lukewarm) water. Remove contact lenses, if present and easy to

do. Continue rinsing. If irritation persists, consult a doctor/medical service.

First-aid measures after ingestion : Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for

symptoms to occur to consult Poison Center.

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

Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Coughing.

Symptoms/effects after skin contact : No effects known. Symptoms/effects after eye contact : No effects known.

Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Irritation of the oral mucous membranes.

Nausea. Vomiting. Gastrointestinal complaints.

Chronic symptoms : Loss of weight. Pain in the joints. Change in the haemogramme/blood composition.

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

No additional information available

## **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

## 5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD: Non combustible.

Explosion hazard : DIRECT EXPLOSION HAZARD: No direct explosion hazard.

Hazardous decomposition products in case of fire : On heating/burning: release of toxic and corrosive gases/vapours (nitrous vapours) and

formation of metal oxides.

#### 5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to

fire/heat: have neighbourhood close doors and windows.

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Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water

spray. Take account of toxic/corrosive precipitation water.

Protection during firefighting : Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

#### **SECTION 6: Accidental release measures**

#### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Gloves (EN 374). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-

contained breathing apparatus (EN 136 + EN 137).

Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames.

Wash contaminated clothes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors

and windows.

#### 6.1.2. For emergency responders

No additional information available

## 6.2. Environmental precautions

No additional information available

#### 6.3. Methods and material for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the

supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Stop dust cloud by humidifying. Scoop solid spill into closing containers. Clean

contaminated surfaces with an excess of water. Wash clothing and equipment after

handling.

### 6.4. Reference to other sections

No additional information available

## **SECTION 7: Handling and storage**

## 7.1. Precautions for safe handling

Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under

local exhaust/ventilation or with respiratory protection. Comply with the legal requirements.

Clean contaminated clothing. Keep container tightly closed.

Hygiene measures : Observe very strict hygiene - avoid contact.

### 7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. water/moisture.

Storage area : Meet the legal requirements. Store in a dry area. Keep container in a well-ventilated place.

 $: \ \ \mathsf{SPECIAL} \ \mathsf{REQUIREMENTS} : \ \mathsf{closing}. \ \mathsf{correctly} \ \mathsf{labelled}. \ \mathsf{meet} \ \mathsf{the} \ \mathsf{legal} \ \mathsf{requirements}.$ 

Secure fragile packagings in solid containers.

: SUITABLE MATERIAL: synthetic material. tin.

#### 7.3. Specific end use(s)

Special rules on packaging

Packaging materials

No additional information available

## SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

## 8.1.1 National occupational exposure and biological limit values

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Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
Belgium - Occupational Exposure Limits		
OEL TWA	0.5 mg/m³	
France - Occupational Exposure Limits		
VME (OEL TWA) 5 mg/m³		
VLE (OEL C/STEL) 10 mg/m³		
United Kingdom - Occupational Exposure Limits		
WEL TWA (OEL TWA) [1]	5 mg/m³	
WEL STEL (OEL STEL) 10 mg/m³		
USA - ACGIH - Occupational Exposure Limits		
ACGIH OEL TWA 0.5 mg/m³ (Respirable fraction)		

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

## 8.1.4. DNEL and PNEC

Ammonium heptamolybdate.4aq a.r. (12054-85-2)			
DNEL/DMEL (Workers)			
Long-term - systemic effects, inhalation	19.36 mg/m³		
DNEL/DMEL (General population)			
Long-term - systemic effects,oral	5.89 mg/kg bw/day		
Long-term - systemic effects, inhalation	5.77 mg/m³		
PNEC (Water)			
PNEC aqua (freshwater)	21.9 mg/l (Anhydrous form)		
PNEC aqua (marine water)	4.2 mg/l (Anhydrous form)		
PNEC (Sediment)			
PNEC sediment (freshwater)	39000 mg/kg dwt (Anhydrous form)		
PNEC sediment (marine water)	4360 mg/kg dwt (Anhydrous form)		
PNEC (Soil)			
PNEC soil	18.2 mg/kg dwt (Anhydrous form)		
PNEC (STP)			
PNEC sewage treatment plant	39.9 mg/l (Anhydrous form)		

## 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

## 8.2.1. Appropriate engineering controls

No additional information available

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#### 8.2.2. Personal protection equipment

#### Personal protective equipment symbol(s):







#### 8.2.2.1. Eye and face protection

#### Eye protection:

Safety glasses (EN 166). In case of dust production: protective goggles (EN 166)

#### 8.2.2.2. Skin protection

#### Skin and body protection:

Protective clothing (EN 14605 or EN 13034)

## Hand protection:

Protective gloves against chemicals (EN 374)

#### Other skin protection

#### Materials for protective clothing:

Excellent resistance: Nitrile rubber. Good resistance: Natural rubber

#### 8.2.2.3. Respiratory protection

#### Respiratory protection:

Dust production: dust mask with filter type P3

#### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

No additional information available

## **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state : Solid

Colour : Colourless-white to yellow-green.
Appearance : Crystalline solid. Powder.

Molecular mass : 1235.86 g/mol Odour : Odourless.
Odour threshold : Not available

Melting point : Not applicable (decomposes)

Freezing point : Not available

Boiling point : Not applicable (decomposes)

Flammability : Not available
Oxidising properties : Not oxidising.
Explosive limits : Not applicable
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Flash point : Not applicable (solid)
Auto-ignition temperature : Not applicable

Decomposition temperature : 90 °C (Anhydrous form)

SADT : Not applicable
pH : 5 (5 %)
pH solution : Not available
Viscosity, kinematic : Not applicable (solid)
Viscosity, dynamic : Not applicable (solid)
Solubility : Soluble in water.

Water: 20.7 g/100ml (20 °C, OECD 105: Water Solubility)

Partition coefficient n-octanol/water (Log Kow) : Not available

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Vapour pressure : No data available in the literature

Vapour pressure at 50°C : Not available

Density : 2860 kg/m³ (20 °C, OECD 109: Density of Liquids and Solids)

Relative density : 2.86 (20 °C, OECD 109: Density of Liquids and Solids)

Relative vapour density at 20°C : Not applicable (solid)

Particle size : 57.8 µm (D10, OECD 110: Particle Size Distribution/Fibre Length and Diameter

Distributions)

#### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

## 9.2.2. Other safety characteristics

Minimum ignition energy : No data available in the literature

Relative evaporation rate (butylacetate=1) : < 1

Specific conductivity : No data available in the literature VOC content : Not applicable (inorganic)
Other properties : Hygroscopic,Acid reaction

## **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Hygroscopic.

## 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

No additional information available

## 10.5. Incompatible materials

No additional information available

## 10.6. Hazardous decomposition products

No additional information available

## **SECTION 11: Toxicological information**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
LD50 oral rat	3883 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))	
LD50 dermal rabbit	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))	
LC50 Inhalation - Rat	> 5.1 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))	

Skin corrosion/irritation : Not classified pH: 5 (5 %)

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Serious eye damage/irritation : Not classified pH: 5 (5 %)

Respiratory or skin sensitisation : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : Not classified STOT-single exposure : Not classified STOT-repeated exposure : Not classified

## Ammonium heptamolybdate.4aq a.r. (12054-85-2)

Viscosity, kinematic Not applicable (solid)

#### 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

No additional information available

#### 11.2.2. Other information

Aspiration hazard

Potential adverse human health effects and symptoms

: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg),Not irritant to skin,Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg),Practically non-toxic by inhalation (LC50 inh, rat > 5 mg/l/4h),Not irritant to eyes

## **SECTION 12: Ecological information**

## 12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC)

No 1272/2008.

Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC).

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not

classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Harmful to crustacea (Daphnia). Slightly harmful to fishes. Inhibition of activated sludge.

May cause eutrophication. Not harmful to algae. pH shift.

Hazardous to the aquatic environment, short-term

(acute)

: Not classified

: Not classified

Hazardous to the aquatic environment, long-term

mazardous to the aquatic environment, long-term

(chronic)

: Not classified

Not rapidly degradable

Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
LC50 - Fish [1]	420 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, Anhydrous form)	
EC50 - Crustacea [1]	79 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Read-across, Anhydrous form)	
ErC50 algae	2453.6 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, Anhydrous form)	

## 12.2. Persistence and degradability

Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
Persistence and degradability Biodegradability: not applicable.		
Chemical oxygen demand (COD)	Not applicable (inorganic)	
ThOD Not applicable (inorganic)		

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## 12.3. Bioaccumulative potential

Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
BCF - Fish [1]	< 0.22 (OECD 305: Bioconcentration: Flow-Through Fish Test, 60 day(s), Oncorhynchumykiss, Flow-through system, Fresh water, Experimental value, Anhydrous form)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).	

## 12.4. Mobility in soil

Ammonium heptamolybdate.4aq a.r. (12054-85-2)		
Surface tension No data available in the literature		
Ecology - soil No (test)data on mobility of the substance available.		

## 12.5. Results of PBT and vPvB assessment

## Ammonium heptamolybdate.4aq a.r. (12054-85-2)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## 12.6. Endocrine disrupting properties

No additional information available

#### 12.7. Other adverse effects

No additional information available

#### **SECTION 13: Disposal considerations**

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations

: Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

Additional information

: Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

European List of Waste (LoW) code

: 15 01 02 - plastic packaging 15 01 04 - metallic packaging

## **SECTION 14: Transport information**

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

ADR	IMDG	IATA	ADN	RID		
14.1. UN number or ID n	14.1. UN number or ID number					
Not applicable Not applicable Not applicable Not applicable Not applicable				Not applicable		
14.2. UN proper shipping name						
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
14.3. Transport hazard class(es)						
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		

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ADR	IMDG	IATA	ADN	RID
14.4. Packing group				
Not applicable Not applicable Not applicable Not applicable Not applicable				Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

## 14.6. Special precautions for user

#### **Overland transport**

Not applicable

#### Transport by sea

Not applicable

## Air transport

Not applicable

#### Inland waterway transport

Not applicable

#### Rail transport

Not applicable

## 14.7. Maritime transport in bulk according to IMO instruments

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

#### **REACH Annex XVII (Restriction List)**

Not listed on REACH Annex XVII

#### **REACH Annex XIV (Authorisation List)**

Not listed on REACH Annex XIV (Authorisation List)

## **REACH Candidate List (SVHC)**

Not listed on the REACH Candidate List

## **PIC Regulation (Prior Informed Consent)**

Not listed on the PIC list (Regulation EU 649/2012)

#### **POP Regulation (Persistent Organic Pollutants)**

Not listed on the POP list (Regulation EU 2019/1021)

## Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

## VOC Directive (2004/42)

VOC content : Not applicable (inorganic)

#### **Explosives Precursors Regulation (2019/1148)**

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

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#### **Drug Precursors Regulation (273/2004)**

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### 15.1.2. National regulations

#### Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).

Observe restrictions according Act on the Protection of Young People in Employment

(JArbSchG)

Water hazard class (WGK) : Not classified according to Regulation Governing Systems for Handling Substances

Hazardous to Waters (AwSV).

Storage class (LGK, TRGS 510) : LGK 13 - Non-combustible solids.

Joint storage table

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for : LGK 4.1A, LGK 5.1C.

Joint storage permitted for : LGK 2A, LGK 2B, LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1B, LGK 5.2,

LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12,

LGK 13. LGK 10-13.

Hazardous Incident Ordinance (12. BImSchV)
Technical Instructions on Air Quality Control (TA

Technical Instructions on Air Quality Control (TA

Luft)

: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

: 5.2.1 Total Dust, including Micro Dust.

## Netherlands

ABM category : A(3) - hazardous for aquatic organisms, may have longterm hazardous effects in aquatic

The substance is not listed

environment

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen –

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Switzerland

Storage class (LK) : NG - Non-hazardous

## 15.2. Chemical safety assessment

No additional information available

## **SECTION 16: Other information**

#### No additional information available

Safety Data Sheet (SDS), EU

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.

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