

1. Identification

Product identifier

Trade name: 617M2 - Aluminium Powder

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

General use: Aluminium powder, stabilized for orthopedic procedures.
Reserved for industrial and professional use.

Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care
Street/POB-No.: 3820 W. Great Lakes Drive
Zip code, city: Salt Lake City, UT 84120
USA

WWW: www.ottobockus.com

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),
Email: USRegulatory@ottobock.com

Additional information: Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency telephone number

CHEMTREC, Telephone: +1 (800) 424-9300

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2. Hazard identification

Classification of the substance or mixture

Flammable Solid - Category 1 Flammable solid.

Water-reactive - Category 2 In contact with water releases flammable gases.

Label elements

Symbols:



Signal word: **Danger**

Hazard statements: Flammable solid.
In contact with water releases flammable gases.

Precautionary statements:

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

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Wear protective gloves/protective clothing.

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.

In case of fire: Use special extinguishing powder for metals or Sand to extinguish.

Other hazards

Explosive dust-air mixtures may form.

Reacts with alkalis, strong acids, oxidizing agents with formation of hydrogen. Generation of heat. Danger of explosion!

Reacts violently with halogens and halogenic hydrocarbons.

Reacts with water or steam liberating hydrogen and heat.

3. Composition/information on ingredients

Substances

Chemical characterization: Aluminium powder

CAS-Number: 7429-90-5

4. First aid measures

In case of inhalation: After inhalation of dust: Provide fresh air.
If you feel unwell, seek medical advice.

Following skin contact: After contact with skin, wash with soap and plenty of water. Change contaminated clothing.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After swallowing: In the event of persistent symptoms seek medical treatment.

Most important symptoms/effects, acute and delayed

May cause irritations.

Dust contact with the eyes can lead to mechanical irritation.

Information to physician

Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

Special extinguishing powder for metals, Class D extinguishing powder.

Cover spilled material with dry sand or cement.

Extinguishing media which must not be used for safety reasons:

Water, carbon dioxide, foam. fire extinguishing agent Fire class A, B, C.

Specific hazards arising from the chemical

Flammable solid. In contact with water releases flammable gases.
A finely distributed product can produce hydrogen with the application of moisture and water. Danger of explosion!
Danger of dust explosion. Danger of spontaneous combustion.
Can be released in case of fire: Toxic metal oxide smoke.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition.
Provide adequate ventilation. Avoid generation of dust.
Avoid contact with the substance. Strictly avoid inhalation of dusts.
Keep unprotected people away. Wear protective equipment.

Environmental precautions:

Do not empty into drains. Danger of explosion!
In case of release, notify competent authorities.

Methods and material for containment and cleaning up

Methods for clean-up: Never use water. Collect dry and place in appropriate containers for disposal. Subsequent cleaning.
Avoid generation of dust. Use only spark proof tools.
Don't use vacuum cleaner or power sweeper to avoid the fire.

Additional information: Attention: Contact with water liberates extremely flammable gases.

7. Handling and storage

Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Avoid generation of dust. Do not breathe dust.
Avoid contact with skin and eyes.
Wear appropriate protective equipment. Wash hands before breaks and after work.
Always close containers tightly after the removal of product.

Precautions against fire and explosion:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Use explosion-proof equipment and non-sparking tools/utensils.
Use explosion-proof electrical/ventilating/lighting equipment.
A finely distributed product can produce hydrogen with the application of moisture and water.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed and dry. Keep only in the original container.
Keep in a cool, well-ventilated place. Protect from moisture.
Only trained personnel may be allowed to enter storage area.

Hints on joint storage: Do not store together with: acids, alkalis, oxidizing agents, combustible material, halogens, halogenated hydrocarbons.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: TWA	1 mg/m ³
USA: NIOSH: Ceiling	5 mg/m ³ (inhalable fraction)
USA: NIOSH: TWA	10 mg/m ³ (inhalable fraction)
USA: NIOSH: TWA	5 mg/m ³ (inhalable fraction)
USA: OSHA: TWA	15 mg/m ³ (inhalable fraction)
USA: OSHA: TWA	5 mg/m ³ (respirable fraction)

Appropriate engineering controls

Provide adequate ventilation, and local exhaust as needed.

Personal protection equipment (PPE)

Respiratory protection: Recommendation: With the formation of dust, use a dust mask.
Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Particulates filter P1 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Nitrile rubber-Layer thickness 0,11 mm - Breakthrough time >480 min
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Wear fire/flamm resistant/retardant clothing. (EN 345)

General hygiene considerations:
Keep away from sources of ignition - No smoking.
Do not breathe dust. Take off immediately all contaminated clothing.
Wash hands before breaks and after work.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa: solid
Form: Powder
Color: gray/silver
Odor: odorless
Odor threshold: No data available

Melting point/freezing point:	1220 °F
Initial boiling point and boiling range:	4472.6 °F
Flammability:	< 10 minutes (according to Regulation (EU) No 1272/2008, annex VI)
Explosion limits:	No data available
Flash point/flash point range:	Not applicable
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	> 1220 °F
pH:	Not applicable
Viscosity:	No data available
Water solubility:	Contact with water liberates extremely flammable gases.
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	No data available
Density:	at 68 °F: 2.70 g/cm ³
Vapor density:	No data available
Particle characteristics:	No data available

Additional information

Explosive properties:	The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. Lower explosion limit: 30 g/m ³
Ignition temperature:	approx. 752 °F
Bulk density:	at 68 °F: Danger of dust explosion. 0.15 - 0.35 kg/m ³
Additional information:	Atomic mass: 26,98 g/mol

10. Stability and reactivity

Reactivity:	Flammable solid.
Chemical stability:	Aluminium powder, stabilized. Stable under recommended storage conditions.
Possibility of hazardous reactions:	In contact with water releases flammable gases. A finely distributed product can produce hydrogen with the application of moisture and water. Danger of dust explosion.
Conditions to avoid:	Protect from: UV-radiation/sunlight Protect from moisture contamination. Avoid generation of dust. Keep away from heat sources, sparks and open flames.
Incompatible materials:	Reacts with alkalis, strong acids, oxidizing agents with formation of hydrogen. Generation of heat. Danger of explosion! Reacts violently with halogens and halogenic hydrocarbons. Reacts with water or steam liberating hydrogen and heat. Keep away from: alcohols, alkali salts, ammonium compounds, nitrates, sulfates, sulfides.
Hazardous decomposition products:	Can be released in case of fire: Toxic metal oxide smoke.

11. Toxicological information

Information on toxicological effects

Toxicological effects:

- Acute toxicity (oral): Lack of data.
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Lack of data.
- Serious eye damage/irritation: Lack of data.
- Sensitisation to the respiratory tract: Lack of data.
- Skin sensitisation: Lack of data.
- Germ cell mutagenicity/Genotoxicity: Lack of data.
- Carcinogenicity: Lack of data.
- Reproductive toxicity: Lack of data.
- Effects on or via lactation: Lack of data.
- Specific target organ toxicity (single exposure): Lack of data.
- Specific target organ toxicity (repeated exposure): Lack of data.
- Aspiration hazard: Lack of data.

Symptoms

May cause irritations.
Dust contact with the eyes can lead to mechanical irritation.

12. Ecological information

Ecotoxicity

Further details: No data available

Persistence and degradability

Further details: Product is not biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water:

No data available

Mobility in soil

No data available

Other adverse effects

General information: Do not empty into drains.

13. Disposal considerations

Waste treatment methods

Product

Recommendation: Contact the product manufacturer prior to disposal.
If recycling is not possible, dispose of according to local waste laws and regulations (information requirements of authorities).

Package

Recommendation: ASN 150104 metallic packaging, or
ASN 150102 Plastic packaging
Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

14. Transport information

UN number

DOT: UN1309
IMDG, IATA-DGR: UN 1309

UN proper shipping name

DOT, IMDG, IATA-DGR: UN 1309, ALUMINIUM POWDER, COATED

Transport hazard class(es)

DOT: 4.1
IMDG: Class 4.1, Subrisk -
IATA-DGR: Class 4.1



Packing group

DOT, IMDG, IATA-DGR: II

Environmental hazards

Marine pollutant: no

Transport in bulk according to IMO instruments

No data available

Special precautions for user

USA: Department of Transportation (DOT)

Labels: 4.1
Special Provisions: IB8, IP2, IP21, T3, TP33, W100
Packaging – Exceptions: 151
Packaging – Non-bulk: 212
Packaging – Bulk: 240
Quantity limitations – Passenger aircraft / rail: 15 kg
Quantity limitations – Cargo only: 50 kg
Vessel stowage – Location: A
Vessel stowage – Other: 13, 39, 52, 53, 74, 101, 147, 148

Sea transport (IMDG)

EmS:	F-G, S-G
Special Provisions:	-
Limited quantities:	1 kg
Excepted quantities:	E2
Package - Instructions:	P002
Package - Provisions:	PP38 PP100
IBC - Instructions:	IBC08
IBC - Provisions:	B4, B21
Tank instructions - IMO:	-
Tank instructions - UN:	T3
Tank instructions - Provisions:	TP33
Stowage and handling:	Category A. H1
Segregation:	SG17 SG25 SG26 SG32 SG35 SG36 SG52
Properties and observations:	If uncoated, it possesses the property of evolving hydrogen gas when in contact with water, especially seawater; if treated with oil or wax, it does not at ordinary temperatures. Reacts readily with acids and caustic alkalis, evolving hydrogen, a flammable gas. Reacts readily with iron oxide, producing a thermite effect. May form explosive mixtures with oxidizing substances. In the event of breakage of receptacles, the scattered powder is readily ignited by sparks or open fire and may give rise to an explosive atmosphere.
Marine pollutant:	no
Segregation group:	15

Air transport (IATA)

Proper shipping name:	UN 1309, ALUMINIUM POWDER, COATED
Hazard label:	Flamm. solid
Excepted Quantity Code:	E2
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y441 - Max. Net Qty/Pkg. 5 kg
Passenger and Cargo Aircraft:	Pack.Instr. 445 - Max. Net Qty/Pkg. 15 kg
Cargo Aircraft only:	Pack.Instr. 448 - Max. Net Qty/Pkg. 50 kg
Special Provisions:	A3 A803
Emergency Response Guide-Code (ERG):	3L

15. Regulatory information

National regulations - U.S. Federal Regulations

NIOSH Recommendations:
Occupational Health Guideline: 0022

National regulations - U.S. State Regulations

No data available

Further regulations, limitations and legal requirements

No data available

16. Other information

Text for labeling: Contains 100 % Aluminium powder, phlegmatized.

Revision date: 11/28/2025
Date of first version: 11/22/2013
Reason of change: General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

Hazard rating systems:



NFPA Hazard Rating:
Health: 0 (Minimal)
Fire: 3 (Serious)
Reactivity: 1 (Slight)
Precautions: W (Material shows unusual reactivity with water)

HMIS Version III Rating:
Health: 0 (Minimal)
Flammability: 3 (Serious)
Physical Hazard: 1 (Slight)
Personal Protection: X = Consult your supervisor

HEALTH	0
FLAMMABILITY	3
PHYSICAL HAZARD	1
	X

Abbreviations and acronyms:

AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
DOT: Department of Transportation's Safety Regulations (USA)
EC: European Community
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
EN: European Standard
EQ: Excepted quantities
EU: European Union
Flammable Solid: Flammable solid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
IMO: International Maritime Organization
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
UN: United Nations
UV: Ultraviolet
vPvB: Very persistent and very bioaccumulative
Water-reactive: Water-reactive
WEL: Workplace Exposure Limit

Department issuing data sheet

Contact person: see section 1: Department responsible for information

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