

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

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EGHS / English

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

1.1. Product identifier

Product Name Aluminum Oxide Powder

Product Code(s) 40-6425-400-080, 40-6430-600-080, 40-6603-030-080, 40-6605-050-080,
40-6609-095-080, 40-6612-125-080

(M)SDS Number 1339775_E

Chemical name

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

Recommended Use Laboratory use.

Uses advised against No information available.

1.3. Details of the supplier of the safety data sheet

Manufacturer ITW Test & Measurement GmbH

Manufacturer Address Boschstraße 10
73734 Esslingen am Neckar / GERMANY
www.buehler-met.de www.buehler.fr www.buehler.co.uk

Phone number +49 (0) 711 4904690-0

E-mail address lab.eu@buehler.com

1.4. Emergency telephone number

Global Access Code: 334545

Americas: +1 760 476 3962

Middle East/Africa: +1 760 476 3959

UK: +44 8 08 189 0979

Europe: +1 760 476 3961

Asia Pacific: +1 760 476 3960

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture**Regulation (EC) No 1272/2008**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

EUH210 - Safety data sheet available on request

2.3. Other hazards

No information available

Section 3: Composition/information on ingredients

3.1 Substances

Chemical name	EC No	CAS No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Aluminum oxide	215-691-6	1344-28-1	90 - 100%	No data available	No data available
Titanium dioxide	236-675-5	13463-67-7	0 - 10%	No data available	No data available
Iron oxide	215-168-2	1309-37-1	0 - 10%	No data available	No data available
Magnesium oxide	-	1309-48-4	< 0.5%	No data available	No data available
Calcium oxide	-	1305-78-8	< 0.6%	No data available	No data available

Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Section 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove to fresh air.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

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

Symptoms No information available.

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

Note to physicians Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)**Identified Uses****Risk Management Methods (RMM)**

The information required is contained in this Material Safety Data Sheet.

Section 8: Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

Chemical name	European Union	United Kingdom	France	Spain	Germany
Aluminum oxide 1344-28-1	-	STEL: 30 mg/m ³ STEL: 12 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	-
Titanium dioxide 13463-67-7	-	STEL: 30 mg/m ³ STEL: 12 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	-
Iron oxide 1309-37-1	-	STEL: 10 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³ TWA: 5 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³	-
Magnesium oxide 1309-48-4	-	STEL: 30 mg/m ³ STEL: 12 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³	-
Calcium oxide 1305-78-8	-	STEL: 6 mg/m ³ TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 1 mg/m ³
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Aluminum oxide 1344-28-1	-	TWA: 10 mg/m ³	TWA: 0.05 mg/m ³	-	TWA: 5 mg/m ³ TWA: 2 mg/m ³
Titanium dioxide 13463-67-7	-	TWA: 10 mg/m ³	-	-	TWA: 6 mg/m ³
Iron oxide 1309-37-1	-	TWA: 5 mg/m ³	-	TWA: 5 mg/m ³	TWA: 3.5 mg/m ³
Magnesium oxide 1309-48-4	-	TWA: 10 mg/m ³	-	-	TWA: 6 mg/m ³
Calcium oxide 1305-78-8	-	TWA: 2 mg/m ³	-	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Aluminum oxide 1344-28-1	STEL 10 mg/m ³ TWA: 5 mg/m ³	STEL: 24 mg/m ³ TWA: 3 mg/m ³	TWA: 2.5 mg/m ³ TWA: 1.2 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³

					STEL: 12 mg/m ³
Titanium dioxide 13463-67-7	STEL 10 mg/m ³ TWA: 5 mg/m ³	TWA: 3 mg/m ³	STEL: 30 mg/m ³ TWA: 10.0 mg/m ³ TWA: 10 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³
Iron oxide 1309-37-1	STEL 10 mg/m ³ TWA: 5 mg/m ³ TWA: 10 mg/m ³	TWA: 3 mg/m ³	STEL: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 3 mg/m ³ STEL: 6 mg/m ³	TWA: 5 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 10 mg/m ³ STEL: 12 mg/m ³
Magnesium oxide 1309-48-4	STEL 20 mg/m ³ STEL 10 mg/m ³ TWA: 5 mg/m ³ TWA: 10 mg/m ³	TWA: 3 mg/m ³	TWA: 5 mg/m ³ TWA: 10 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³	TWA: 4 mg/m ³ TWA: 5 mg/m ³ TWA: 10 mg/m ³ STEL: 10 mg/m ³ STEL: 12 mg/m ³ STEL: 30 mg/m ³
Calcium oxide 1305-78-8	STEL 4 mg/m ³ TWA: 2 mg/m ³	STEL: 2 mg/m ³ TWA: 2 mg/m ³	STEL: 6 mg/m ³ TWA: 2 mg/m ³	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ STEL: 6 mg/m ³

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing.

Environmental exposure controls No information available.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Powder(s)
Appearance Gray
Odor Odorless
Color No information available
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	No data available	None known	
Melting / freezing point	>2000°C (>3632°F)	None known	
Boiling point / boiling range	>2900°C (>5252°F)	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air		None known	
Upper flammability limit	No data available		
Lower flammability limit	No data available		

Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	3.9 g/cm ³	None known
Water Solubility	Insoluble	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Viscosity	No data available	None known

9.2. Other information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	0%
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

Section 10: Stability and reactivity**10.1. Reactivity**

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3. Possibility of hazardous reactions

Possibility of Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure**

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Numerical measures of toxicity**Acute Toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 10,833.00 mg/kg

Unknown acute toxicity

- 99.5 % of the mixture consists of ingredient(s) of unknown toxicity
- 93.5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 99.5 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 99.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 99.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 99.5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum oxide	> 5000 mg/kg (Rat)	-	-
Titanium dioxide	> 10000 mg/kg (Rat)	-	-
Iron oxide	> 10000 mg/kg (Rat)	-	-
Magnesium oxide	= 3990 mg/kg (Rat) = 3870 mg/kg (Rat)	-	-
Calcium oxide	= 500 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Iron oxide	-	96h LC50: = 100000 mg/L (Danio rerio)	-	-
Calcium oxide	-	96h LC50: = 1070 mg/L (Cyprinus carpio)	-	-

12.2. Persistence and degradability

Persistence and Degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
Aluminum oxide	The substance is not PBT / vPvB PBT assessment does not apply
Titanium dioxide	The substance is not PBT / vPvB PBT assessment does not apply
Iron oxide	The substance is not PBT / vPvB PBT assessment does not apply
Calcium oxide	The substance is not PBT / vPvB PBT assessment does not apply

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	No information available.

Section 14: Transport information

IMDG/IMO	Not regulated
14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Marine Pollutant	Not applicable
14.6 Special Provisions	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID	Not regulated
14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

ADR	Not regulated
14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

IATA	Not regulated
14.1 UN-No.	Not regulated
14.2 Proper Shipping Name	NON REGULATED
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

Section 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

France**Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number	Title
Iron oxide 1309-37-1	RG 44, RG 44bis, RG 94 RG 44, RG 94	-

Water hazard class (WGK) Not dangerous

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Persistent Organic Pollutants

Not applicable.

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable.

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

No information available.

Section 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	-	Skin designation

Key literature references and sources for datawww.ChemADVISOR.com/

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This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

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End of Safety Data Sheet