



ES WIRKT.

Safety Data Sheet according to Regulation (EC) No 1907/2006 (REACH)

Aluminium blackening

Print date 23.03.2026
Revision date 20.02.2026
Version 2.0 (en)
replaces version of 25.01.2024 (1.5)

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

1.1 Product identifier

Trade name/designation Aluminium blackening
Unique Formula Identifier UFI: 0302-Y2V6-9007-TCE7

Hazard components

sulphuric-acid, Selenium Dioxide, Natriumhydroxid

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

Use of the substance/mixture

Liquid for blackening (blackening) aluminium.

Uses advised against

All types of spray or nebulization application

1.3 Details of the supplier of the safety data sheet

Supplier

Ballistol GmbH
Hauptstraße 20
DE-84168 Aham
Telephone 0874496990
Telefax 0874496996
E-mail info@ballistol.de
Website www.ballistol.de

Manufacturer

F.W.Klever
Hauptstraße 20
D-84168 Aham
Telephone +49 (0) 8744 96 99 10
Telefax + 49 (0) 8744 96 99 96
E-mail info@ballistol.de
Website www.ballistol.de

1.4 Emergency telephone number

Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Met. Corr. 1, H290
Skin Corr. 1B, H314
Eye Dam. 1, H318
Aquatic Chronic 2, H411

Hazard statements for physical hazards

H290 May be corrosive to metals.



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Hazard statements for health hazards

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Hazard statements for environmental hazards

H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

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

Hazard components

sulphuric-acid, Selenium Dioxide, Natriumhydroxid

Hazard pictograms



GHS05



GHS09

Signal word

Danger

Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection.
P310 Immediately call a POISON CENTER/doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P501 Dispose of contents/container to recycling

Supplemental hazard information

EUH032 Contact with acids liberates very toxic gas.

2.3 Other hazards

Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT and/or vPvB criteria according to REACH, Annex XIII.

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients

CAS No	EC No	Index No	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
7775-09-9	231-887-4	017-005-00-9	sodium chlorate	1.9 - 5 weight-%	Ox. Sol. 1; H271 Acute Tox. 4 ; H302 Aquatic Chronic 2; H411	



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CAS No	EC No	Index No	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
7664-93-9	231-639-5	016-020-00-8	sulphuric-acid	1.9 - 5 weight-%	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	
7758-98-7	231-847-6	029-004-00-0	copper sulphate	1 ≤ 3 weight-%	Acute Tox. 4 ; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	
7446-08-4	231-194-7		Selenium Dioxide	1 - 1.9 weight-%	Acute Tox. 3; H301 Acute Tox. 2; H330 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	
1310-73-2	215-185-5		Natriumhydroxid	1 - 1.9 weight-%	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	
12336-95-7			Chrom(III)sulfat, basisch	< 1 weight-%	Acute Tox. 4; H332	
7681-49-4	231-667-8	009-004-00-7	sodium fluoride	0.1 ≤ 1 weight-%	Acute Tox. 3 ; H301 Eye Irrit. 2; H319 Skin Irrit. 2; H315; EUH032	

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove affected person from the danger area and lay down.
Pay attention to the self-protection of the first responder

Following inhalation

Provide fresh air.
No direct artificial respiration to be given by first aider.
In the event of persistent complaints, provide medical treatment.

Following skin contact

After contact with skin, take off immediately all contaminated clothing and wash immediately with plenty of water.
Consult a doctor if skin irritation persists.

After eye contact

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
Remove any existing contact lenses if possible
Keep eyelids open and rinse abundantly with clean, running water for at least 10 minutes.

Following ingestion

Call a physician immediately.
Rinse the mouth, spit out the liquid again and drink water (max. 2 tirink glasses). Do not cause vomiting.
Do not allow neutralisers to drink.
Possible adverse effects on humans and possible symptoms: Gastric perforation.



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4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Burning and pain of the eyes, skin and mucous membranes. After swallowing, strong irritant effect on the oral cavity and pharynx as well as danger of perforation of the oesophagus.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor

After inhalation of vapours, inhale dexamethasone spray (Auxiloson). In case of extensive and prolonged skin contact, monitor blood calcium concentration.

Inject local burns with a 10% calcium gluconate solution.

In case of oral intake: do not use sodium hydrogen carbonate or calcium carbonate for neutralisation because the resulting CO₂ can lead to gastric perforation. Allow magnesium oxide suspended in water to drink slowly.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Unsuitable extinguishing media

If there is a risk of contamination of ground or surface water, do not extinguish with water.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In the event of fire the following can be released:

Nitrogen oxides (NO_x)

Schwefeloxide (SO_x)

Hydrogen fluoride

5.3 Advice for firefighters

Special protective equipment for firefighters

Use self-contained breathing apparatus and chemical protective suit. Full protective suit.

Additional information

Co-ordinate fire-fighting measures to the fire surroundings.

Product is incombustible

Defeat gases, vapours, fog with water spray

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.

Do not breathe gas / fumes / vapor / spray

Use personal protection equipment.

6.2 Environmental precautions

Inform competent authorities in case of release of larger quantities.

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment

Take up with absorbent material (e.g. sand, kieselguhr, acid binder, general-purpose binder, sawdust).

Disposal according to regulations.



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6.4 Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid:

Eye contact

Skin contact

Do not inhale gases/vapours/aerosols.

Advices on general occupational hygiene

Create and follow a skin protection plan.

When using do not eat, drink, smoke, sniff.

Remove contaminated, saturated clothing immediately.

Keep away from food and drink.

Wash hands and face before breaks and after work and take a shower if necessary.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep/Store only in original container.

Keep container tightly closed.

Ensure adequate ventilation of the storage area.

Keep under lock and key. Store in a place accessible only to authorised persons.

Materials to avoid

Do not store together with:

Acid

Further information on storage conditions

The provisions of the Ordinance on Hazardous Substances with the associated technical rules (TRGS 510) must be observed.

Recommended storage temperature: 20°C.

7.3 Specific end use(s)

No data available

*** SECTION 8: Exposure controls/personal protection**

*** 8.1 Control parameters**

*** Occupational exposure limit values**

CAS No	EC No	Substance name	occupational exposure limit value
7664-93-9	231-639-5	Sulphuric acid (mist)	0,05 [mg/m ³] 2009/161/EU
1310-73-2	215-185-5	Sodium hydroxide	Short-term(mg/m ³) 2 (1) (1) 15 minutes reference period (IE)
7664-93-9	231-639-5	Sulphuric acid	0,05 [mg/m ³] (IE)



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CAS No	EC No	Substance name	occupational exposure limit value
1310-73-2	215-185-5	Sodium hydroxide	Short-term(mg/m ³) 2 (UK)
7664-93-9	231-639-5	Sulphuric acid	0,05 (1)(2) [mg/m ³] (1) Thoracic fraction (2) The UK Advisory Committee on Toxic Substances has expressed concern that, for the OELs shown in parentheses, health may not be adequately protected because of doubts that the limit was not soundly-based. These OELs were included in the published UK 2002 list and its 2003 supplement, but are omitted from the published 2005 list. (UK)

* 8.2 Exposure controls

* Personal protection equipment

Eye/face protection

safety goggles
Eye glasses with side protection

* Hand protection

Nitrile gloves ≥ 0.4 mm, breakthrough time ≥ 480 minutes in accordance with EN ISO 374
The figures are based on data from the literature and manufacturer's information. The actual breakthrough time may vary depending on the manufacturer.

Body protection:

Arbeitsschutzkleidung

Respiratory protection

Respiratory protection necessary at:
insufficient ventilation

* SECTION 9: Physical and chemical properties

* 9.1 Information on basic physical and chemical properties

Physical state

liquid

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:	not determined		
Melting point/freezing point	not determined		
Boiling point or initial boiling point and boiling range	> 100 °C pressure 1013 mbar		
flammability	not determined		
Lower and upper explosion limit	not determined		
Flash point	not determined		
Auto-ignition temperature	not determined		



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	Value	Method	Source, Remark
Decomposition temperature	not determined		
pH	in delivery state 3.2 (20°C)		
Viscosity	not determined		
Solubility(ies)	Water solubility		easily soluble
Partition coefficient n-octanol/water (log value)	not determined		
Vapour pressure	not determined		
Density and/or relative density	1- 1.1 g/cm ³ (20°C) pressure 1013 mbar		
Relative vapour density	not determined		
particle characteristics	not determined		

9.2 Other information

Other safety characteristics

	Value	Method	Source, Remark
Oxidising properties			Das Produkt ist nicht brandfördernd

SECTION 10: Stability and reactivity

10.1 Reactivity

In contact with acid, emits very toxic gases. The product contains selenium dioxide, which can be absorbed through the skin and can damage the nerves. Avoid contamination at all costs.

10.2 Chemical stability

Under normal conditions of storage and use, no hazardous decomposition products should be formed. Hazardous decomposition products may be released when exposed to high temperatures: CO, CO₂, NOX, smoke

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Direct sunlight, heat

10.5 Incompatible materials

Acid

10.6 Hazardous decomposition products

No data available

*** SECTION 11: Toxicological information**

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

Acute toxicity



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Animal data

	Effective dose	Method, Evaluation	Source, Remark
Acute oral toxicity	68.1 mg/kg Species Rat		Indication refers to selenium dioxide.
Acute dermal toxicity	not determined		
Acute inhalation toxicity	not determined		

*** Skin corrosion/irritation**

Animal data

Result / Evaluation	Method	Source, Remark
		Causes severe burns to the skin

*** Serious eye damage/irritation**

Animal data

Result / Evaluation	Method	Source, Remark
		Causes severe burns to the skin

Sensitisation to the respiratory tract

not determined

Skin sensitisation

Animal data

Result / Evaluation	Dose / Concentration	Method	Source, Remark
			Based on available data, the classification criteria are not met.

Germ cell mutagenicity

not determined

Carcinogenicity

not determined

Reproductive toxicity

not determined

STOT-single exposure

not determined

STOT-repeated exposure

not determined

Aspiration hazard

not determined

11.2 Information on other hazards

No data available

*** SECTION 12: Ecological information**

*** 12.1 Toxicity**

*** Aquatic toxicity**

	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 2.884 g/m ³ Test duration 96 h		Value refers to selenium dioxide
Chronic (long-term) fish toxicity	not determined		



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	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) toxicity to crustacea	not determined		
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	not determined		
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT and/or vPvB criteria according to REACH, Annex XIII.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
110105 *	pickling acids

Appropriate disposal / Package

Recycle sales packaging via DSD (Duales System Deutschland).

Remark

Must not be disposed of together with household waste. Do not allow to enter drains.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	UN 3264	UN 3264	UN 3264
14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric-acid)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid)	Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid)



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	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.3 Transport hazard class(es)	8	8	8
14.4 Packing group	II	II	II
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

Caution: highly corrosive.

14.7 Maritime transport in bulk according to IMO instruments

No data available

Land transport (ADR/RID)

UN number or ID number UN 3264
UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric-acid)
Transport hazard class(es) 8
Hazard label(s) 8
Classification code C1
Packing group II
Environmental hazards No
Limited quantity (LQ) 1 L
Special provisions 274
Tunnel restriction code E

Sea transport (IMDG)

UN number or ID number UN 3264
UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid)
Transport hazard class(es) 8
Packing group II
Environmental hazards No
Limited quantity (LQ) 1 L
Marine pollutant No
EmS F-A, S-B

Air transport (ICAO-TI / IATA-DGR)

UN number or ID number UN 3264
UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid)
Transport hazard class(es) 8
Packing group II
Environmental hazards No



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SECTION 15: Regulatory information

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

No data available

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

Ox. Sol. 1: Oxidizing solids, Category 1
Met. Corr. 1: Corrosive to metals, Category 1
Acute Tox. 3, H301: Acute Toxicity (oral), Category 3
Acute Tox. 4, H302: Acute Toxicity (oral), Category 4
Skin Corr. 1A: Skin corrosion, Sub-category 1A
Skin Corr. 1B: Skin corrosion, Sub-category 1B
Skin Irrit. 2: Skin irritation, Category 2
Eye Dam. 1: Serious eye damage, Category 1
Eye Irrit. 2: Eye irritation, Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure), Category 2
Aquatic Acute 1: Short-term (acute) aquatic hazard, Category 1
Aquatic Chronic 1: Long-term (chronic) aquatic hazard, Category 1
Aquatic Chronic 2: Long-term (chronic) aquatic hazard, Category 2
Acute Tox. 2, H330: Acute Toxicity (inhalation), Category 2
Acute Tox. 4, H332: Acute Toxicity (inhalation), Category 4

Additional information

National and local regulations concerning chemicals shall be observed.
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.

Relevant H- and EUH-phrases (Number and full text)

H271	May cause fire or explosion; strong oxidiser.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Indication of changes

* Data changed compared with the previous version