



according to Regulation (EC) No 1907/2006

Chrome plating solution

Revision: 16.07.2025 Product code: DG-003 Page 1 of 12

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

1.1. Product identifier

Chrome plating solution

UFI: 4M30-E0S3-E00G-M59T

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

Use of the substance/mixture

Chrome plating of metals

Uses advised against

Other uses than those specified in section 1.2 of this safety data sheet are not recommended.

1.3. Details of the supplier of the safety data sheet

Company name: Thomas Henning e.K. Street: Buschurweg 4 D-76870 Kandel Place: Telephone: +49 7275 94 78 199 E-mail: info@drgalva.com Contact person: Thomas Henning E-mail: info@drgalva.com Internet: draalva.net

1.4. Emergency telephone Emergency Action: In the event of a medical enquiry involving this product,

<u>number:</u> please contact your doctor or local hospital accident and emergency department

or the NHS enquiry service.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

Chromium hydroxide sulphate

L-(+)-lactic acid; (2S)-2-hydroxypropanoic acid

potassium hydroxide; caustic potash

Signal word: Danger

Pictograms:



Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.



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P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves and eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

P310 Immediately call a POISON CENTER/doctor.

P501 Dispose of contents/container to an appropriate recycling or disposal facility.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name				
	EC No	Index No	REACH No		
	Classification (Regulation (EC) N	o 1272/2008)			
39380-78-4	Chromium hydroxide sulphate			7 - < 10 %	
	619-674-8				
	Skin Corr. 1B; H314				
79-33-4	L-(+)-lactic acid; (2S)-2-hydroxyp	ropanoic acid		5 - < 7 %	
	201-196-2	607-743-00-5			
	Skin Corr. 1C, Eye Dam. 1; H314	H318 EUH071			
12125-02-9	ammonium chloride			5 - < 10 %	
	235-186-4	017-014-00-8			
	Acute Tox. 4, Eye Irrit. 2; H302 H	319			
1310-58-3	potassium hydroxide; caustic pota	ash		1.5 - < 2 %	
	215-181-3	019-002-00-8	01-2119487136-33		
	Met. Corr. 1, Acute Tox. 4, Skin C	orr. 1A, Eye Dam. 1; H290 H302 H31	4 H318		
7664-41-7	ammonia			0.5 - < 1 %	
	231-635-3	007-001-01-2	01-2119488876-14		
	Flam. Gas 2, Press. Gas (Comp.) H314 H400	, Acute Tox. 3, Skin Corr. 1B, Aquatic	Acute 1; H221 H280 H331		

Full text of H and EUH statements: see section 16.



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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. I	Limits, M-factors and ATE	
12125-02-9	235-186-4	ammonium chloride	5 - < 10 %
	oral: ATE = 500) mg/kg	
1310-58-3	215-181-3	potassium hydroxide; caustic potash	1.5 - < 2 %
) mg/kg Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin == 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2	
7664-41-7	231-635-3	ammonia	0.5 - < 1 %
	inhalation: ATE H335: >= 5 - 10	= 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists) STOT SE 3;	

Further Information

The percentages of the ingredients not listed here are all below the level of consideration.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of troubles or persistent symptoms, consult an doctor/physician.

After inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of irregular breathing or respiratory arrest, perform artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Call a doctor. Change contaminated clothing. Wash contaminated clothing before reuse.

After contact with eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. Protect uninjured eye.

After ingestion

Rinse mouth, spit liquid again. Do NOT induce vomiting. Drink water for reasons of precaution. Call a physician immediately.

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

Causes severe skin burns and eye damage.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

Carbon dioxide (CO2). Extinguishing powder. Atomized water. Foam.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Upon exposure to fire, harmful gases may be emitted.

5.3. Advice for firefighters

Co-ordinate fire-fighting measures to the fire surroundings. Wear a self-contained breathing apparatus and chemical protective clothing.





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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Wear suitable protective clothing. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

For containment

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Wear personal protection equipment. Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Personal precautions: refer to section 8 Provide adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothes.

Advice on general occupational hygiene

Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

Further information on handling

Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store only in original container. Keep container tightly closed in a cool, well-ventilated place.

Protect from heat/overheating.

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

Chrome plating of metals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters



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Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7664-41-7	Ammonia, anhydrous	20	14		TWA (8 h)	
		50	36		STEL (15 min)	
12125-02-9	Ammonium chloride, fume	-	10		TWA (8 h)	
		-	20		STEL (15 min)	
1310-58-3	Potassium hydroxide	-	2		STEL (15 min)	

Additional advice on limit values

Currently there are no further exposure limits available.

8.2. Exposure controls

Appropriate engineering controls

Do not breathe gas/fumes/vapour/spray. Provide protection equipment (eye wash bottles, etc.).

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable material:: Butyl rubber. Thickness of glove material: >0,5 mm

penetration time (maximum wearing period): >480 min.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Protective clothing: Chemical resistant safety shoes

The design of personal protective equipment must be selected specifically for the job, depending on the concentration and quantity of hazardous substances. The chemical resistance of the protective agents should be clarified with their suppliers.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Protective respiration apparatus not using surrounding air (breathing apparatus) (DIN EN 133).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: black
Odour: characteristic

Melting point/freezing point:

8 no data available Boiling point or initial boiling point and 100 °C 100 °C

boiling range:

Flammability:

Lower explosion limits:

Upper explosion limits:

no data available

not applicable



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Auto-ignition temperature:

Decomposition temperature:

pH-Value (at 20 °C):

Viscosity / kinematic:

No data available

available

water solubility:

no data available

no data available

Solubility in other solvents no data available

Dissolution rate: no data available Partition coefficient n-octanol/water: no data available Dispersion stability: no data available no data available Vapour pressure: Vapour pressure: no data available 1,1-1,2 g/cm³ Density: Relative density: no data available Bulk density: no data available Relative vapour density: no data available no data available Particle characteristics:

9.2. Other information

Information with regard to physical hazard classes

Explosive properties not Explosive.
Self-ignition temperature

Solid: no data available

Oxidizing properties no data available

Other safety characteristics

Viscosity / dynamic: no data available

Further Information no data available

SECTION 10: Stability and reactivity

10.1. Reactivity

none known

10.2. Chemical stability

The product is stable under normal environmental conditions (room temperature).

10.3. Possibility of hazardous reactions

No dangerous reactivity under regular conditions.

10.4. Conditions to avoid

Protect against contaminations.

10.5. Incompatible materials

Oxidising substances

10.6. Hazardous decomposition products

Upon exposure to fire, harmful gases may be emitted.

SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.



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ATEmix calculated

ATE (oral) > 5000 mg/kg; ATE (dermal) > 2000 mg/kg

CAS No	Chemical name							
	Exposure route	Dose		Species	Source	Method		
12125-02-9	ammonium chloride	ammonium chloride						
	oral	ATE mg/kg	500					
1310-58-3	potassium hydroxide; car	otassium hydroxide; caustic potash						
	oral	ATE mg/kg	500					
7664-41-7	ammonia							
	inhalation vapour	ATE	3 mg/l					
	inhalation dust/mist	ATE	0,5 mg/l					

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation: Causes serious eye damage.

Corrosive to the respiratory tract.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: 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.

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.



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CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
12125-02-9	ammonium chloride						
	Acute fish toxicity	LC50	209 mg/l	96 h	Cyprinus carpio	IUCLID	
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna		
7664-41-7	ammonia						
	Acute fish toxicity	LC50 mg/l	0,53		Onchorhynchus mykiss		
	Fish toxicity	NOEC	1,2 mg/l		Oncorhynchus gorbuscha		

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
12125-02-9	ammonium chloride	-4,37
7664-41-7	ammonia	-1,38

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/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Disposal according to official regulations.

Consult the local waste disposal expert about waste disposal. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Chromium

hydroxide sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8



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Classification code: C1
Special Provisions: 274
Limited quantity: 1 L
Excepted quantity: E2
Transport category: 2
Hazard No: 80
Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Chromium

hydroxide sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8



Classification code: C1
Special Provisions: 274
Limited quantity: 1 L
Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Chromium

hydroxide sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8



Special Provisions: 274

Limited quantity: 1 L

Excepted quantity: E2

EmS: F-A, S-B

Segregation group: 1 - acids

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Chromium

hydroxide sulphate)

14.3. Transport hazard class(es): 8
14.4. Packing group:

Hazard label:



Special Provisions: A3 A803 Limited quantity Passenger: 0.5 L



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Passenger LQ: Y840 Excepted quantity: E2

IATA-packing instructions - Passenger:851IATA-max. quantity - Passenger:1 LIATA-packing instructions - Cargo:855IATA-max. quantity - Cargo:30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No special precautions known.

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to Directive

Not subject to 2012/18/EU (SEVESO III)

2012/18/EU (SEVESO III):

Additional information

Regulation (EC) No. 1907/2006 (REACH)

Regulation (EC) No. 648/2004 [Detergents regulation]: not applicable

Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer: not applicable

Regulation (EC) No 2019/1021 on persistent organic pollutants: not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council concerning the export and import of dangerous chemicals: This mix contains no chemicals that are subject to the export notification procedures (annex 1).

This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: none

This mixture contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH: none

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

Additional information

Observe in addition any national regulations!

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

ammonium chloride

potassium hydroxide; caustic potash

ammonia

SECTION 16: Other information

Changes

Version 1,00 - 17.03.2021 - first creation

Version 1,02 - 16.07.2025 - Change and revision of the SDS because of new information / recipe



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Abbreviations and acronyms

Met. Corr. 1: Corrosive to metals, hazard category 1 Flam. Gas 2: Flammable gases, hazard category 2

Press. Gas (Comp.): Gases under pressure: Compressed gas

Acute Tox. 3: Acute toxicity, hazard category 3 Skin Corr. 1A: Skin corrosion, sub-category 1A Eye Dam. 1: Serious eye damage, hazard category 1

Eye Irrit. 2: Eye irritation, hazard category 2

Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement

concerning the International Carriage of Dangerous Goods by Road)

BImSchV (Fed.Imm.Prot.Act): Directive on the Implementation of the Federal Immission Protection Act

CAS: Chemical Abstracts Service

DIN: Norm of the Deutsche Institut für Normung (German Institute for Standardization)

EC: Effective Concentration

EG: European Community (Europäische Gemeinschaft)

EN: European Norm

IATA: International Air Transport Association

IBC Code: International Code for the Construction and Equipment of ships carrying Dangerous Chemicals in

Bulk

ICAO: International Civil Aviation Organization

IMDG: International Maritime Code for Dangerous Goods ISO: Norm of the International Standards Organization

CLP: Classification, Labeling, Packaging

IUCLID: International Uniform ChemicaL Information Database

LC: Lethal concentration

LD: Lethal dose

log Kow: Octanol/water partition coefficient

MARPOL: Maritime Pollution Convention = Convention for the Prevention of Maritime Pollution from Ships

OECD: Organisation for Economic Co-operation and Development

PBT: Persistent, bio-cumulative, toxic

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail

TRGS: Technische Regeln für Gefahrstoffe

UN: United Nations

VOC: Volatile Organic Compounds

vPvB: very persistent and very bio-cumulative

VwVwS: Administrative Regulation for Water Pollutants

WGK: German Water Hazard Class

GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

TLV: Threshold Limiting Value STOT: Specific Target Organ Toxicity

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)

H221 Flammable gas.

H280 Contains gas under pressure; may explode if heated.

H290 May be corrosive to metals.



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H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H400	Very toxic to aquatic life.
EUH071	Corrosive to the respiratory tract.

Further Information

The information given in this safety data sheet is to describe the product's safety regulations. It is not for guaranteeing certain characteristics and is based on today's knowledge. The safety data sheet was generated upon information of pre-suppliers by:

asseso AG, Ottostraße 1, 63741, Aschaffenburg, Germany Phone: +49 (0)6021 - 1 50 86-0, Fax: +49 (0)6021 - 1 50 86-77, E-Mail: eu-sds@asseso.eu, www.asseso.eu

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)