

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

Zenker Solution

Print date: 19.11.2015

Product code: 3D-038

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Zenker Solution

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

Use as laboratory reagent

1.3. Details of the supplier of the safety data sheet

Company name: Waldeck GmbH & Co KG
Division Chroma
Street: Havixbecker Str. 62
Place: D-48161 Münster
Post-office box: 410180
D-48065 Münster
Telephone: +49(0)180/2247662 Telefax: +49(0)180/1247662
Responsible Department: Labor
Mo. – Do.: 08.00 – 17.00 Uhr, Fr.: 08.00 – 15.00 Uhr
1.4. Emergency telephone number: +49(0)180/2247662

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Acute toxicity: Acute Tox. 2

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory or skin sensitisation: Resp. Sens. 1

Respiratory or skin sensitisation: Skin Sens. 1

Germ cell mutagenicity: Muta. 1B

Germ cell mutagenicity: Muta. 2

Carcinogenicity: Carc. 1B

Reproductive toxicity: Repr. 1B

Reproductive toxicity: Repr. 2

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Fatal if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Harmful if inhaled.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause genetic defects.

Suspected of causing genetic defects.

May cause cancer.

May damage fertility. May damage the unborn child.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008**



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Hazard components for labelling

mercury dichloride; mercuric chloride
potassium dichromate

Signal word: Danger

Pictograms:



Hazard statements

H300 Fatal if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H340 May cause genetic defects.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360FD May damage fertility. May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/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/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.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
7487-94-7	mercury dichloride; mercuric chloride			1 - < 5 %
	231-299-8	080-010-00-X		
	Muta. 2, Repr. 2, Acute Tox. 2, STOT RE 1, Skin Corr. 1B, Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1; H341 H361f *** H300 H372 ** H314 H400 H410			
7778-50-9	potassium dichromate			1 - < 5 %
	231-906-6	024-002-00-6		
	Ox. Sol. 2, Carc. 1B, Muta. 1B, Repr. 1B, Acute Tox. 2, Acute Tox. 3, STOT RE 1, Acute Tox. 4, Skin Corr. 1B, Resp. Sens. 1, Skin Sens. 1, Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1; H272 H350 H340 H360FD H330 H301 H372 ** H312 H314 H334 H317 H400 H410			

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

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SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately.

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

No information available.

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.

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Hazardous combustion products

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. 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**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

Safe handling: see section 7

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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**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.

Advice on storage compatibility

No special measures are necessary.

7.3. Specific end use(s)

Use as laboratory reagent

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
-	Chromium (VI) compounds (as Cr)	-	0.05		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
-	Mercury: divalent inorganic mercury compounds including mercuric oxide and mercuric chloride (measured as mercury)	-	0.02		TWA (8 h)	
		-	-		STEL (15 min)	

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
	Chromium VI	chromium	10 µmol/mol	urine	Post shift

8.2. Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

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Eye/face protection

Suitable eye protection: goggles.

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. 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

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	orange-red
Odour:	odourless

Test method

pH-Value:	not determined
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Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	not determined
Flash point:	not determined

Flammability

Solid:	not applicable
Gas:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined

Auto-ignition temperature

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined

Oxidizing properties

Not oxidizing.	
Vapour pressure:	not determined
Density (at 20 °C):	1,2 g/cm ³
Water solubility:	easily soluble

Solubility in other solvents

not determined	
Partition coefficient:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information



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Solid content:

not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

none

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Fatal if swallowed.

Harmful if inhaled.

ATEmix calculated

ATE (oral) 21,6 mg/kg; ATE (inhalative aerosol) 4,087 mg/l

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
7487-94-7	mercury dichloride; mercuric chloride				
	oral	LD50	1 mg/kg	Rat	RTECS
7778-50-9	potassium dichromate				
	oral	ATE	100 mg/kg		
	dermal	ATE	1100 mg/kg		
	inhalative vapour	ATE	0,5 mg/l		
	inhalative (4 h) aerosol	LC50	0,094 mg/l	Rat	

Irritation and corrosivity

Causes severe skin burns and eye damage.

Sensitising effects

May cause an allergic skin reaction. (potassium dichromate)

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (potassium dichromate)

STOT-single exposure

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

Severe effects after repeated or prolonged exposure

May cause damage to organs through prolonged or repeated exposure.

Carcinogenic/mutagenic/toxic effects for reproduction



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May cause genetic defects. (potassium dichromate)
 Suspected of causing genetic defects. (mercury dichloride; mercuric chloride)
 May cause cancer. (potassium dichromate)
 May damage fertility. May damage the unborn child. (potassium dichromate)

Aspiration hazard

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

Additional information on tests

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
7487-94-7	mercury dichloride; mercuric chloride					
	Acute fish toxicity	LC50	0,13 mg/l	96 h	Leuciscus idus	
7778-50-9	potassium dichromate					
	Acute fish toxicity	LC50	26,13 mg/l	96 h	Pimephales promelas	
	Acute algae toxicity	ErC50 mg/l	0,16 - 0,59	96 h	Chlorella vulgaris	

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:

UN 3287

14.2. UN proper shipping name:

TOXIC LIQUID, INORGANIC, N.O.S.



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14.3. Transport hazard class(es):

6.1

14.4. Packing group:

II

Hazard label:

6.1



Classification code:

T4

Special Provisions:

274

Limited quantity:

100 mL

Excepted quantity:

E4

Transport category:

2

Hazard No:

60

Tunnel restriction code:

D/E

Inland waterways transport (ADN)**14.1. UN number:**

UN 3287

14.2. UN proper shipping name:

TOXIC LIQUID, INORGANIC, N.O.S.

14.3. Transport hazard class(es):

6.1

14.4. Packing group:

II

Hazard label:

6.1



Classification code:

T4

Special Provisions:

274 802

Limited quantity:

100 mL

Excepted quantity:

E4

Marine transport (IMDG)**14.1. UN number:**

UN 3287

14.2. UN proper shipping name:

TOXIC LIQUID, INORGANIC, N.O.S.

14.3. Transport hazard class(es):

6.1

14.4. Packing group:

II

Hazard label:

6.1



Special Provisions:

274

Limited quantity:

100 mL

Excepted quantity:

E4

EmS:

F-A, S-A

Air transport (ICAO)**14.1. UN number:**

UN 3287

14.2. UN proper shipping name:

TOXIC LIQUID, INORGANIC, N.O.S.

14.3. Transport hazard class(es):

6.1

14.4. Packing group:

II

Hazard label:

6.1



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Special Provisions:	A3 A4 A137	
Limited quantity Passenger:	1 L	
Passenger LQ:	Y641	
Excepted quantity:	E4	
IATA-packing instructions - Passenger:		654
IATA-max. quantity - Passenger:		5 L
IATA-packing instructions - Cargo:		662
IATA-max. quantity - Cargo:		60 L

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Additional information

To follow: 850/2004/EC, 1107/2009/EC, 649/2012/EC. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

National regulatory information

Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water contaminating class (D):	3 - highly water contaminating
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

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

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 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
 CAS: Chemical Abstracts Service
 LC50: Lethal concentration, 50%
 LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H300	Fatal if swallowed.
H301	Toxic if swallowed.

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H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H340	May cause genetic defects.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
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.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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