

according to Regulation (EC) No 1907/2006

Dragendorff's reagent R 2 (stock solution) Reag. Ph. Eur., chapter 4.1.1

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

1.1. Product identifier

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

Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg

Telephone: 0203/5194-0 Telefax: 0203/5194-290

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephone For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,

number: Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

accepted)

Further Information

This product is a mixture. REACH Registration Number see section 3.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Eye Dam. 1; H318 STOT RE 1: H372

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

(+)-tartaric acid potassium iodide

Signal word: Danger

Pictograms:





Hazard statements

H318 Causes serious eye damage.

H372 Causes damage to organs (thyroid gland) through prolonged or repeated exposure if

swallowed.



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Precautionary statements

P260 Do not breathe mist/vapours/spray.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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 data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No	1272/2008)		
87-69-4	(+)-tartaric acid			15 - < 20 %
	201-766-0		01-2119537204-47	
	Eye Dam. 1; H318			
7681-11-0	potassium iodide			10 - < 15 %
	231-659-4		01-2119906339-35	
	STOT RE 1; H372			
1304-85-4	bismuth subnitrate			1 - < 5 %
	Ox. Sol. 2, Skin Irrit. 2, Eye Irrit. 2,	Ox. Sol. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H272 H315 H319 H335		

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

Specific Conc. Limits, M-factors and ATE

Specific Co	iic. Liiiiits, ivi-ia	ictors and ATE	
CAS No	EC No	Chemical name	Quantity
	Specific Conc	Limits, M-factors and ATE	
87-69-4	201-766-0	(+)-tartaric acid	15 - < 20 %
	dermal: LD50) = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg	
7681-11-0	231-659-4	potassium iodide	10 - < 15 %
	oral: LD50 =	3118 mg/kg	
1304-85-4		bismuth subnitrate	1 - < 5 %
	inhalation: LC	C50 = > 5,07 mg/l (dusts or mists); oral: LD50 = > 2000 mg/kg	

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.

Call a doctor if you feel unwell.



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After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

Agitation

Vomiting

May cause sensitisation especially in sensitive humans.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible liquids

Hazardous combustion products

In case of fire may be liberated:

Hydrogen iodide (HI)

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.

Avoid contact with skin, eyes and clothes.

In case of fire: Wear self-contained breathing apparatus.

Additional information

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

Move undamaged containers from immediate hazard area if it can be done safely.

Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders: Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.



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6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

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

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

Handle and open container with care.

Provide adequate ventilation.

Avoid contact with skin, eyes and clothes.

Do not breathe vapour/aerosol.

Avoid: aerosol or mist formation

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Take off contaminated clothing.

Wash hands before breaks and after work.

When using do not eat or drink.

Further information on handling

Take off contaminated clothing and wash it before reuse.

Wash hands before breaks and after work.

Draw up and observe skin protection programme.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed.

Keep container dry.

Further information on storage conditions

Protect against: Light

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters



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DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
87-69-4	(+)-tartaric acid			
Worker DNEL,	long-term	inhalation	systemic	5,2 mg/m³
Worker DNEL,	long-term	dermal	systemic	2,9 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	1,3 mg/m³
Consumer DNEL, long-term		dermal	systemic	1,5 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	8,1 mg/kg bw/day
1304-85-4	bismuth subnitrate			
Worker DNEL, long-term		inhalation	systemic	2,7 mg/m³
Consumer DNEL, long-term		inhalation	systemic	0,67 mg/m³
Consumer DNEL, long-term		oral	systemic	5 mg/kg bw/day

PNEC values

CAS No	Substance		
Environmen	tal compartment	Value	
87-69-4	(+)-tartaric acid		
Freshwater		0,312 mg/l	
Freshwater	(intermittent releases)	0,514 mg/l	
Marine wate	r	0,312 mg/l	
Freshwater	sediment	1,141 mg/kg	
Marine sedir	ment	1,141 mg/kg	
Micro-organ	sms in sewage treatment plants (STP)	10 mg/l	
Soil		0,045 mg/kg	
1304-85-4	bismuth subnitrate		
Freshwater		0,137 mg/l	
Freshwater	(intermittent releases)	1,37 mg/l	
Marine wate	r	0,014 mg/l	
Freshwater sediment		14176,5 mg/kg	
Marine sediment		1417,7 mg/kg	
Secondary poisoning		33,3 mg/kg	
Micro-organisms in sewage treatment plants (STP)		17,5 mg/l	
Soil		120,3 mg/kg	

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):



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By long-term hand contact

Trade name/designation KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11 mm Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11 mm Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid Colour: clear Odour. odourless Odour threshold: No data available

Melting point/freezing point: No data available Boiling point or initial boiling point and No data available

boiling range:

Flammability: not determined

not applicable Lower explosion limits: not determined Upper explosion limits: not determined Flash point: not applicable Auto-ignition temperature: No data available Decomposition temperature: No data available

No data available pH-Value: Viscosity / kinematic: No data available

Water solubility: No data available

Solubility in other solvents

No data available

Dissolution rate: No data available Partition coefficient n-octanol/water: not determined Dispersion stability: No data available Vapour pressure: No data available Vapour pressure: No data available Density: 1,226 g/cm3 Relative density: No data available



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Bulk density:

Relative vapour density:

Particle characteristics:

No data available

No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

No data available

Sustaining combustion:

No data available

Self-ignition temperature

Solid: not determined Gas: not applicable

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate: not determined Solvent separation test: No data available Solvent content: No data available Solid content: No data available Sublimation point: No data available No data available Softening point: No data available Pour point: No data available Viscosity / dynamic: No data available No data available Flow time:

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Protect against: Light

10.3. Possibility of hazardous reactions

Alkali metals Ammonia (NH3) Hydrogen peroxide Oxidising agent Fluorine

10.4. Conditions to avoid

Light

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated: SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information



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

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name	Chemical name				
	Exposure route	Dose		Species	Source	Method
87-69-4	69-4 (+)-tartaric acid					
	oral	LD50 mg/kg	> 2000	Rat	N/A (2010)	data sharing dispute
	dermal	LD50 mg/kg	> 2000	Rat	Study report (2010)	OECD Guideline 402
7681-11-0	potassium iodide					
	oral	LD50 mg/kg	3118	Rat	Study report (1980)	OECD Guideline 401
1304-85-4	bismuth subnitrate					
	oral	LD50 mg/kg	> 2000	Rat	Study report (2012)	EU Method B.1 tris
	inhalation (4 h) dust/mist	LC50 mg/l	> 5,07	Rat	Study report (2010)	OECD Guideline 436

Irritation and corrosivity

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

May cause sensitisation especially in sensitive humans.

Carcinogenic/mutagenic/toxic effects for reproduction

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

Causes damage to organs through prolonged or repeated exposure. (potassium iodide)

Aspiration hazard

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

Information on likely routes of exposure

There are no data available on the mixture itself.

Specific effects in experiment on an animal

There are no data available on the mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Endocrine disrupting properties

There are no data available on the mixture itself.



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Other information

There are no data available on the mixture itself.

Further information

Irritant

Agitation

Vomiting

May cause sensitisation especially in sensitive humans.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	No Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
87-69-4	(+)-tartaric acid						
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Danio rerio	Study report (2010)	OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	51,404	72 h	Pseudokirchneriella subcapitata	Study report (2010)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	93,313	48 h	Daphnia magna	Study report (2010)	OECD Guideline 202
	Acute bacteria toxicity	(EC50 mg/l)	> 1000	3 h	Nature of inoculum: activated sludge, domestic, no	Study report (2010)	OECD Guideline 209
7681-11-0	potassium iodide						
	Acute fish toxicity	LC50 mg/l	3780	96 h	Oncorhynchus mykiss	Publication (1995)	other: Protocol to d
	Acute crustacea toxicity	EC50 mg/l	1,27	48 h	Daphnia magna	Study report (2012)	OECD Guideline 202
1304-85-4	bismuth subnitrate						
	Acute fish toxicity	LC50 mg/l	> 137	96 h	Danio rerio	REACh Registration Dossier	OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	> 137	72 h	Pseudokirchneriella subcapitata	REACh Registration Dossier	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	> 137	48 h	Daphnia magna	REACh Registration Dossier	OECD Guideline 202

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
87-69-4	(+)-tartaric acid	0,012

12.4. Mobility in soil

There are no data available on the mixture itself.

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.

There are no data available on the mixture itself.



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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.

There are no data available on the mixture itself.

12.7. Other adverse effects

There are no data available on the mixture itself.

Further information

Avoid release to the environment.

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

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



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EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU

(SEVESO III):

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

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles 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 hazard class (D): 3 - highly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2.

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% Ox. Sol: Oxidising solid Skin Irrit: Skin irritation Eye Dam: Eye damage Eye Irrit: Eye irritation

STOT SE: Specific target organ toxicity - single exposure STOT RE: Specific target organ toxicity - repeated exposure

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

Classification	Classification procedure
Eye Dam. 1; H318	Calculation method
STOT RE 1; H372	Calculation method

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

H372 Causes damage to organs (thyroid gland) through prolonged or repeated exposure if

swallowed.

H372 Causes damage to organs through prolonged or repeated exposure.

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.



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The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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