

**Safety data sheet  
according to 1907/2006/EC, Article 31**

revised on: 30.09.2021

Version number 4

Creation Date: 09.08.2017

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

- **1.1 Product identifier**
- **Trade name: Iodine solution according HANUS 0.1 mol/l**
- **Article number:** 2284
- **CAS Number:** Relevant CAS No. see chapter 3
- **Registration number** This product is a mixture. REACH registration numbers see section 3.
- **UFI:** FGS0-E0G7-K00Q-CCV5
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture**  
Industrial use  
Reagent for analysis  
Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Th. Geyer GmbH & Co. KG  
Dornierstr. 4 – 6  
D-71272 Renningen  
  
Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417  
www.thgeyer.de  
sicherheitsdatenblaetter@thgeyer.de
- **Further information obtainable from:** Product management department
- **1.4 Emergency telephone number:**  
National Poisons Information Service  
(Birmingham Centre)  
City Hospital  
Dudley Road  
Birmingham B18 7QH  
Tel.:Emergency: (00 44) 87 06 00 62 66

**SECTION 2: Hazards identification**

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



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS05 corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.

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### Hazard pictograms



GHS02 GHS05

### Signal word Danger

### Hazard-determining components of labelling:

Acetic acid

### Hazard statements

H226 Flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3 Other hazards

### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

### Dangerous components:

CAS: 64-19-7 EINECS: 200-580-7 Reg.nr.: 01-2119475328-30-XXXX	Acetic acid Flam. Liq. 3, H226 Skin Corr. 1A, H314	90-<100%
CAS: 7553-56-2 EINECS: 231-442-4	Iodine STOT RE 1, H372 Aquatic Acute 1, H400 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335	1-<2.5%

Additional information: For the wording of the listed hazard phrases refer to section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information:

First aider needs to protect himself.

Immediately remove any clothing soiled by the product.

#### After inhalation:

Take affected persons into fresh air and keep quiet.

Supply fresh air.

In case of pulmonary irritation, administer glucocorticoid metered dose inhaler

Seek medical treatment.

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- **After skin contact:**  
Flush contaminated skin with soap and plenty of water.  
Call a doctor immediately.  
take care of a Possibility of inhalation at the same time
- **After eye contact:**  
Protect unharmed eye.  
Rinse out opened eye for several minutes under running water.  
Continue to rinse during transport with isotonic saline, alternatively with water.  
Seek immediate medical advice.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
Call emergency doctor  
Do not attempt to neutralize.  
A person vomiting while laying on their back should be turned onto their side.
- **Information for doctor:** Please observe safety data sheet/label.
- **4.2 Most important symptoms and effects, both acute and delayed**  
Cramp  
Breathing difficulty  
Gastric or intestinal disorders  
Coughing  
Nausea  
Risk of aspiration
- **Hazards**  
Danger of gastric perforation.  
Danger of pneumonia.  
Danger of impaired breathing.  
Risk of organ damage (liver, kidney)
- **4.3 Indication of any immediate medical attention and special treatment needed**  
Give Glucocorticoid-Aerosol in case of lung irritation.  
If necessary oxygen respiration treatment.  
Monitor circulation.  
Later observation for pneumonia and pulmonary oedema.  
Symptomatic treatment.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
Water spray, powder, carbon dioxide or foam. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.  
Combustible.  
Under certain fire conditions, traces of other toxic gases cannot be excluded.
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Wear fully protective suit.  
Wear self-contained respiratory protective device.  
Do not inhale explosion gases or combustion gases.
- **Additional information**  
Cool endangered receptacles with water spray.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

- Wear protective clothing.
- Use respiratory protective device against the effects of fumes/dust/aerosol.
- Ensure adequate ventilation.
- Keep people at a distance and stay on the windward side.
- Keep away from ignition sources.
- Avoid contact with eyes and skin.

#### 6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.

#### 6.3 Methods and material for containment and cleaning up:

- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Dispose of the material collected according to regulations.

#### 6.4 Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

- Store in cool, dry place in tightly closed receptacles.
- Keep away from heat and direct sunlight.
- Apply the general protection and hygiene measures for the handling with chemicals.

#### Information about fire - and explosion protection:

- Avoid all sources of ignition: heat, sparks, open flame.
- Keep respiratory protective device available.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage:

##### Requirements to be met by storerooms and receptacles:

- Provide acid-resistant floor.
- Store only in the original receptacle.

##### Information about storage in one common storage facility:

- Store away from oxidising agents.
- Store away from water.

##### Further information about storage conditions:

- Store in dry conditions.
- Protect from humidity and water.

##### Storage class: 3

#### 7.3 Specific end use(s) No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

#### Additional information about design of technical facilities: No further data; see item 7.

#### Ingredients with limit values that require monitoring at the workplace:

CAS: 64-19-7 Acetic acid	
WEL	Short-term value: 50 mg/m <sup>3</sup> , 20 ppm Long-term value: 25 mg/m <sup>3</sup> , 10 ppm
CAS: 7553-56-2 Iodine	
WEL	Short-term value: 1.1 mg/m <sup>3</sup> , 0.1 ppm

#### DNELs

- relevant DNELs of components of the mixture

Acetic acid 64-19-7 DNEL 25 mg/m<sup>3</sup> Human, inhalation Workers (industry) chronic - local effects  
 Acetic acid 64-19-7 DNEL 25 mg/m<sup>3</sup> Human, inhalation Workers (industry) acute - local effects

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- **PNECs**

- Acetic acid 64-19-7 PNEC 3.058 mg/l freshwater short-term (once)
- Acetic acid 64-19-7 PNEC 0.306 mg/l seawater short-term (once)
- Acetic acid 64-19-7 PNEC 85 mg/l Wastewater treatment plant (STP) short term (once)
- Acetic acid 64-19-7 PNEC 11.36 mg/kg freshwater sediment short-term (once)
- Acetic acid 64-19-7 PNEC 1.136 mg/kg marine sediment short-term (single)
- Acetic acid 64-19-7 PNEC 0,47 mg/kg soil short-term (once)

- **Additional information:** The lists valid during the making were used as basis.

- **8.2 Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

- **Respiratory protection:**

Not necessary if room is well-ventilated.



Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

- **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Pungent

- **pH-value at 20 °C:** <2

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· <b>Change in condition</b> Melting point/freezing point:	16.6 °C
Initial boiling point and boiling range:	~118 °C
· <b>Flash point:</b>	23 - 60 °C
· <b>Flammability (solid, gas):</b>	Not applicable.
· <b>Ignition temperature:</b>	485 °C (CAS: 64-19-7 Acetic acid)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Product is not selfigniting.
· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b> Lower:	4 Vol %
Upper:	17 Vol %
· <b>Vapour pressure at 20 °C:</b>	16 hPa
· <b>Density at 20 °C:</b>	~1.05–1.15 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water:</b>	Fully miscible.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b> Dynamic at 20 °C:	1.24 mPas
Kinematic:	Not determined.
· <b>Solvent content:</b> Organic solvents:	90–<100 %
VOC (EC)	90–<100 %
· <b>Solids content:</b>	~1.0 %
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**  
Forms explosive gas mixture with air.  
Reacts with alcohols, amines, aqueous acids and alkalis.  
Reacts with acids, alkalis and oxidising agents.
- **10.4 Conditions to avoid**  
Protect from humidity.  
Heat, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:**  
In case of fire / burns, development of hazardous combustion gases or vapors possible.  
Flammable gases/vapours  
Corrosive gases/vapours

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Irritant gases/vapours

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### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values relevant for classification:**

Oral	LD50	3,310 mg/kg (rat)
Dermal	LD50	1,130 mg/kg (rabbit)

- **CAS: 64-19-7 Acetic acid**

Oral	LD50	3,310 mg/kg (rat)
Dermal	LD50	1,060 mg/kg (rabbit)

- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**  
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity 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.

### SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

- **CAS: 64-19-7 Acetic acid**

EC50	65 mg/l (Cru) (48 h)
LC50 96 h	88 mg/l (fish)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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· <b>14.5 Environmental hazards:</b>	Not applicable.
· <b>14.6 Special precautions for user</b>	Warning: Corrosive substances.
· <b>Hazard identification number (Kemler code):</b>	83
· <b>EMS Number:</b>	F-E,S-C
· <b>Segregation groups</b>	Acids
· <b>Stowage Category</b>	A
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 2789 ACETIC ACID SOLUTION, 8, II

### SECTION 15: Regulatory information

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

##### · Directive 2012/18/EU

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category P5c FLAMMABLE LIQUIDS**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

##### · **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

##### · **REGULATION (EU) 2019/1148**

##### · **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

##### · **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

##### · **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

##### · **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

##### · **National regulations:**

##### · **Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Application, use and handling of our products take place out of our control and are solely your responsibility.

· **Relevant phrases**

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

· **Department issuing SDS:** Product management

· **Contact:** Product management

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· **\* Data compared to the previous version altered.**