

# SAFETY DATA SHEET

Creation Date 11-Oct-2010

Revision Date 19-Dec-2025

Revision Number 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

**Product Name** Hydrogen tetrachloroaurate(III) hydrate

**Cat No. :** AC223620000; AC223620010; AC223620050

**CAS No** 27988-77-8

**Synonyms** Chloroauric acid hydrate; Gold trichloride acid hydrate

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

|  |              |
|--|--------------|
| Acute oral toxicity                              | Category 4   |
| Skin Corrosion/Irritation                        | Category 1 B |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Skin Sensitization                               | Category 1   |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |

### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

Harmful if swallowed  
 Causes severe skin burns and eye damage  
 May cause respiratory irritation  
 May cause an allergic skin reaction

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Use only outdoors or in a well-ventilated area

**Response**

Immediately call a POISON CENTER or doctor

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

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

**Ingestion**

Rinse mouth  
 Do NOT induce vomiting

**Storage**

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

### 3. Composition/information on Ingredients

| Component                                   | CAS No     | Weight % |
|---|------------|----------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | >95      |
| Tetrachloroauric acid                       | 16903-35-8 | -        |

### 4. First-aid measures

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
 Immediate medical attention is required.

|  |  |
|--|--|
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.  |
| <b>Inhalation</b>                          | Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration.   |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician or poison control center immediately.   |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | No information available  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | No information available  |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | No data available   |
| <b>Lower</b>                            | No data available   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

### Hazardous Combustion Products

Hydrogen chloride gas.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

|                    |                          |                         |                                |
|--------------------|--------------------------|-------------------------|--------------------------------|
| <b>Health</b><br>3 | <b>Flammability</b><br>0 | <b>Instability</b><br>1 | <b>Physical hazards</b><br>N/A |
|--------------------|--------------------------|-------------------------|--------------------------------|

## 6. Accidental release measures

|   |   |
|---|---|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid dust formation. |
| <b>Environmental Precautions</b>            | Should not be released into the environment. See Section 12 for additional Ecological Information.  |
| <b>Methods for Containment and Clean Up</b> | Sweep up and shovel into suitable containers for disposal. Avoid dust formation.  |

## 7. Handling and Storage

|                 |  |
|-----------------|--|
| <b>Handling</b> | Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. |
| <b>Storage.</b> | Corrosives area. To maintain product quality: Keep refrigerated. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Reducing Agent. Metals.   |

## 8. Exposure controls / personal protection

|   |   |
|---|---|
| <b><u>Exposure Guidelines</u></b>           | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.   |
| <b>Engineering Measures</b>                 | Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.   |
| <b><u>Personal Protective Equipment</u></b> |   |
| <b>Eye/face Protection</b>                  | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.   |
| <b>Skin and body protection</b>             | Wear appropriate protective gloves and clothing to prevent skin exposure.   |
| <b>Respiratory Protection</b>               | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Recommended Filter type:</b>             | Particulates filter conforming to EN 143.   |
| <b>Hygiene Measures</b>                     | Handle in accordance with good industrial hygiene and safety practice.  |

## 9. Physical and chemical properties

|  |                          |                       |                          |
|--|--------------------------|-----------------------|--------------------------|
| <b><u>Appearance</u></b>                       |                          |                       |                          |
| <b>Physical State</b>                          | Solid                    |                       |                          |
| <b>Color</b>                                   | Orange                   |                       |                          |
| <b>Odor</b>                                    | Odorless                 |                       |                          |
| <b>Odor Threshold</b>                          | No information available |                       |                          |
| <b><u>Property</u></b>                         | <b><u>Values</u></b>     | <b><u>Remarks</u></b> | <b><u>Method</u></b>     |
| <b>Melting Point/Range</b>                     | 30 °C                    |                       |                          |
| <b>Softening Point</b>                         | No data available        |                       |                          |
| <b>Boiling Point/Range</b>                     | No information available |                       |                          |
| <b>Flash Point</b>                             | No information available | <b>Method -</b>       | No information available |
| <b>Flammability (liquid)</b>                   | Not applicable           | Solid                 |                          |
| <b>Flammability (solid,gas)</b>                | No information available |                       |                          |
| <b>Explosion Limits</b>                        | No data available        |                       |                          |
| <b>Autoignition Temperature</b>                | No data available        |                       |                          |
| <b>Decomposition Temperature</b>               | 100 °C                   |                       |                          |
| <b>pH</b>                                      | No information available |                       |                          |
| <b>Viscosity</b>                               | Not applicable           | Solid                 |                          |
| <b>Water Solubility</b>                        | Soluble                  |                       |                          |
| <b>Solubility in other solvents</b>            | No information available |                       |                          |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |                       |                          |
| <b>Vapor Pressure</b>                          | No information available |                       |                          |
| <b>Density / Specific Gravity</b>              | No data available        |                       |                          |

|                                 |                   |       |
|---------------------------------|-------------------|-------|
| <b>Bulk Density</b>             | No data available |       |
| <b>Vapor Density</b>            | Not applicable    | Solid |
| <b>Particle characteristics</b> | No data available |       |

**Other Information**

|                          |   |
|--------------------------|---|
| <b>Molecular Formula</b> | H Au Cl <sub>4</sub> · x H <sub>2</sub> O |
| <b>Molecular Weight</b>  | 339.78                                    |
| <b>Evaporation Rate</b>  | Not applicable - Solid                    |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | Hygroscopic, Light sensitive.  |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Avoid dust formation. Exposure to light. Exposure to moisture. |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Reducing Agent, Metals  |
| <b>Hazardous Decomposition Products</b> | Hydrogen chloride gas  |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

**Information on expected route of exposure**

|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Causes burns. May be harmful if inhaled.           |
| <b>Ingestion</b>  | Harmful if swallowed. Causes burns.                |
| <b>Eyes</b>       | Causes burns.                                      |
| <b>Skin</b>       | Causes burns. May be harmful in contact with skin. |

**Toxicology data for the components**

| Component                                   | LD50 Oral              | LD50 Dermal | LC50 Inhalation |
|---|------------------------|-------------|-----------------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | >464 mg/kg (Rat)       | -           | -               |
| Tetrachloroauric acid                       | LD50 = 464 mg/kg (rat) | -           | -               |

|   |   |
|---|---|
| <b>Toxicologically Synergistic Products</b>   | No information available                |
| <b>(b) skin corrosion/irritation;</b>         | Category 1 B                            |
| <b>(c) serious eye damage/irritation;</b>     | Category 1                              |
| <b>(d) respiratory or skin sensitization;</b> |   |
| <b>Respiratory</b>                            | No data available                       |
| <b>Skin</b>                                   | Category 1                              |
|   | May cause sensitization by skin contact |
| <b>(e) germ cell mutagenicity;</b>            | No data available                       |
| <b>(f) carcinogenicity;</b>                   |   |

The table below indicates whether each agency has listed any ingredient as a carcinogen

| Component                                   | CAS No     | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---|------------|------------|------------|------------|------------|------------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Tetrachloroauric acid                       | 16903-35-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** No information available.

**(j) aspiration hazard;** Not applicable  
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

| Component             | Freshwater Algae  | Freshwater Fish                                  | Microtox   | Water Flea                                |
|-----------------------|---|--|------------|---|
| Tetrachloroauric acid | EC50 = 1.91 mg/L<br>(1.30–2.83, 95% IC) (72-h)<br>OECD 201 Scenedesmus subspicatus. | LC50 = 15.7 mg/L (96h)<br>OECD 203 Rainbow trout | Not listed | LC50 ~2 mg/l (48h) OECD 202 Daphnia magna |

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

DOT

|                                |  |
|--------------------------------|--|
| <b>UN-No</b>                   | UN3260                                     |
| <b>Proper Shipping Name</b>    | Corrosive solid, acidic, inorganic, n.o.s. |
| <b>Technical Shipping Name</b> | Chloroauric acid                           |
| <b>Hazard Class</b>            | 8  |
| <b>Packing Group</b>           | II   |
| <b>TDG</b>                     |  |
| <b>UN-No</b>                   | UN3260                                     |
| <b>Proper Shipping Name</b>    | Corrosive solid, acidic, inorganic, n.o.s. |
| <b>Technical Shipping Name</b> | Chloroauric acid                           |
| <b>Hazard Class</b>            | 8  |
| <b>Packing Group</b>           | II   |
| <b>IATA</b>                    |  |
| <b>UN-No</b>                   | UN3260                                     |
| <b>Proper Shipping Name</b>    | Corrosive solid, acidic, inorganic, n.o.s. |
| <b>Technical Shipping Name</b> | Chloroauric acid                           |
| <b>Hazard Class</b>            | 8  |
| <b>Packing Group</b>           | II   |
| <b>IMDG/IMO</b>                |  |
| <b>UN-No</b>                   | UN3260                                     |
| <b>Proper Shipping Name</b>    | Corrosive solid, acidic, inorganic, n.o.s. |
| <b>Technical Shipping Name</b> | Chloroauric acid                           |
| <b>Hazard Class</b>            | 8  |
| <b>Packing Group</b>           | II   |

## 15. Regulatory Information

### United States of America Inventory

| Component                                   | CAS No     | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---|------------|------|---|-----------------------------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | -    | -   | -                           |
| Tetrachloroauric acid                       | 16903-35-8 | X    | ACTIVE  | -                           |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b)** - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component                                   | CAS No     | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|---|------------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | -   | -   | -         | -     | -    | -    | X    | -     | -        |
| Tetrachloroauric acid                       | 16903-35-8 | X   | -   | 240-948-4 | X     | X    | X    | X    | X     | KE-33284 |

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations** Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH** Not applicable

| Component                                   | CAS No     | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|---|------------|---|---|---|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | -   | Use restricted. See entry 75. (see link for restriction details)              | -   |
| Tetrachloroauric acid                       | 16903-35-8 | -   | -   | -   |

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

| Component                                   | CAS No     | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|------------|----------------|------------------------------|---------------------------|--|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |
| Tetrachloroauric acid                       | 16903-35-8 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component                                   | CAS No     | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|------------|---|--|----------------------------|------------------------------------|
| Aurate(1-), tetrachloro-, hydrogen, hydrate | 27988-77-8 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| Tetrachloroauric acid                       | 16903-35-8 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other Information

#### Prepared By

Product stewardship (Regulatory Affairs)  
Thermo Fisher Scientific  
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#### Creation Date

11-Oct-2010

#### Revision Date

19-Dec-2025

#### Print Date

19-Dec-2025

#### Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**