

## SAFETY DATA SHEET

Version 6.4  
Revision Date 10/08/2021  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Platinum(IV) chloride

Product Number : 206113  
Brand : Aldrich  
CAS-No. : 13454-96-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Respiratory sensitization (Category 1), H334  
Skin sensitization (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

|                            |                                                                                                                                                                            |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazard statement(s)        |                                                                                                                                                                            |
| H301                       | Toxic if swallowed.                                                                                                                                                        |
| H314                       | Causes severe skin burns and eye damage.                                                                                                                                   |
| H317                       | May cause an allergic skin reaction.                                                                                                                                       |
| H334                       | May cause allergy or asthma symptoms or breathing difficulties if inhaled.                                                                                                 |
| Precautionary statement(s) |                                                                                                                                                                            |
| P260                       | Do not breathe dusts or mists.                                                                                                                                             |
| P264                       | Wash skin thoroughly after handling.                                                                                                                                       |
| P270                       | Do not eat, drink or smoke when using this product.                                                                                                                        |
| P272                       | Contaminated work clothing must not be allowed out of the workplace.                                                                                                       |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                                                              |
| P285                       | In case of inadequate ventilation wear respiratory protection.                                                                                                             |
| P301 + P310 + P330         | IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.                                                                                                       |
| 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.                                                                       |
| P304 + P340 + P310         | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.                                                       |
| P305 + P351 + P338 + P310  | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. |
| P333 + P313                | If skin irritation or rash occurs: Get medical advice/ attention.                                                                                                          |
| P342 + P311                | If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.                                                                                                        |
| P363                       | Wash contaminated clothing before reuse.                                                                                                                                   |
| P405                       | Store locked up.                                                                                                                                                           |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.                                                                                                        |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                          |
|------------------|--------------------------|
| Synonyms         | : Platinum tetrachloride |
| Formula          | : Cl <sub>4</sub> Pt     |
| Molecular weight | : 336.89 g/mol           |
| CAS-No.          | : 13454-96-1             |
| EC-No.           | : 236-645-1              |

| Component                               | Classification                                                                                     | Concentration |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|---------------|
| <b>platinum(IV)-chloride (57.5% Pt)</b> |                                                                                                    |               |
|                                         | Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Resp. Sens. 1; Skin Sens. 1; H301, H314, H318, H334, H317 | <= 100 %      |

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas

Not combustible.

Ambient fire may liberate hazardous vapours.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. 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**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

#### **Storage class**

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

| Component                        | CAS-No.    | Value | Control parameters | Basis                                                                                   |
|----------------------------------|------------|-------|--------------------|-----------------------------------------------------------------------------------------|
| platinum(IV)-chloride (57.5% Pt) | 13454-96-1 | TWA   | 0.002 mg/m3        | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|                                  |            | TWA   | 0.002 mg/m3        | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|                                  |            | TWA   | 0.002 mg/m3        | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                           |
|                                  |            | TWA   | 0.002 mg/m3        | USA. NIOSH Recommended Exposure Limits                                                  |
|                                  |            | PEL   | 0.002 mg/m3        | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

## 8.2 Exposure controls

### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### Body Protection

protective clothing

#### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                 |                                             |
|---------------------------------|---------------------------------------------|
| a) Appearance                   | Form: powder<br>Color: dark brown           |
| b) Odor                         | No data available                           |
| c) Odor Threshold               | No data available                           |
| d) pH                           | No data available                           |
| e) Melting point/freezing point | Melting point/range: 370 °C (698 °F) - dec. |
| f) Initial boiling point        | No data available                           |

and boiling range

|                                                 |                                                 |
|-------------------------------------------------|-------------------------------------------------|
| g) Flash point                                  | ( )Not applicable                               |
| h) Evaporation rate                             | No data available                               |
| i) Flammability (solid, gas)                    | No data available                               |
| j) Upper/lower flammability or explosive limits | No data available                               |
| k) Vapor pressure                               | No data available                               |
| l) Vapor density                                | No data available                               |
| m) Density                                      | 4.303 g/cm <sup>3</sup> at 25 °C (77 °F) - lit. |
| Relative density                                | No data available                               |
| n) Water solubility                             | No data available                               |
| o) Partition coefficient: n-octanol/water       | No data available                               |
| p) Autoignition temperature                     | No data available                               |
| q) Decomposition temperature                    | No data available                               |
| r) Viscosity                                    | No data available                               |
| s) Explosive properties                         | No data available                               |
| t) Oxidizing properties                         | No data available                               |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

no information available

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Aluminum, Mild steel

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 276 mg/kg

Remarks: (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Oral: absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract

Inhalation: No data available

Inhalation: Corrosive to respiratory system.

Dermal: No data available

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Severe irritations

Remarks: (RTECS)

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

### 11.2 Additional Information

spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Platinum compounds are generally highly toxic, even though the rate of absorption via the gastrointestinal tract is relatively poor. Symptoms of platinum intoxication are hepatic and renal damage, impaired hearing, and severe sensitization with allergic manifestations in predisposed persons (rhinitis, asthmatic attacks, urticaria). Platinum is not known to play a physiological role.

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

No data available

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### **12.6 Endocrine disrupting properties**

No data available

### **12.7 Other adverse effects**

No data available

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## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

#### **Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.



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## SECTION 14: Transport information

### DOT (US)

UN number: 2923    Class: 8 (6.1)    Packing group: II  
Proper shipping name: Corrosive solids, toxic, n.o.s. (platinum(IV)-chloride (57.5% Pt))  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

UN number: 2923    Class: 8 (6.1)    Packing group: II    EMS-No: F-A, S-B  
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (platinum(IV)-chloride (57.5% Pt))

### IATA

UN number: 2923    Class: 8 (6.1)    Packing group: II  
Proper shipping name: Corrosive solid, toxic, n.o.s. (platinum(IV)-chloride (57.5% Pt))

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## SECTION 15: Regulatory information

### SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Acute Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

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## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Aldrich - 206113

Page 9 of 10

