

1 Identification

Product identifier

Product name: Platinum(IV) chloride

Stock number: 11045

CAS Number:

13454-96-1

EC number:

236-645-1

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS05 GHS06 GHS08

Signal word

Danger

Hazard statements

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

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.

P405 Store locked up.

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

WHMIS classification

D1B - Toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

E - Corrosive material



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 0 Flammability = 0

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

Product name: Platinum(IV) chloride					
vPvB: Not applicable.					
(Contd. of page 1)					
3 Composition/information on ingredients Chemical characterization: Substances CAS# Description: 13454-96-1 Platinum(IV) chloride Identification number(s): EC number: 236-645-1					
4 First-aid measures Description of first aid measures General information Immediately remove any clothing soiled by the product. After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed Causes severe skin burns. Causes serious eye damage. Indication of any immediate medical attention and special treatment needed No further relevant information available.					
5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Hydrogen chloride (HCl) Platinum oxide Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.					
6 Accidental release measures Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow product to reach sewage system or any water course. Methods and material for containment and cleaning up: Use neutralizing agent. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. 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.					
7 Handling and storage Handling Precautions for safe handling Handle under dry protective gas. Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Prevent formation of dust. Information about protection against explosions and fires: The product is not flammable Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from water/moisture. Store away from oxidizing agents. Further information about storage conditions: Store under dry inert gas. This product is hygroscopic. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and water. Specific end use(s) No further relevant information available.					
8 Exposure controls/personal protection Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace: 13454-96-1 Platinum(IV) chloride (100.0%) <table><tr><td>PEL (USA)</td><td>Long-term value: 0.002 mg/m³ as Pt</td></tr><tr><td>REL (USA)</td><td>Long-term value: 0.002 mg/m³ as Pt</td></tr></table>		PEL (USA)	Long-term value: 0.002 mg/m³ as Pt	REL (USA)	Long-term value: 0.002 mg/m³ as Pt
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REL (USA)	Long-term value: 0.002 mg/m³ as Pt				
(Contd. on page 3) USA					

Product name: Platinum(IV) chloride			(Contd. of page 2)
TLV (USA)	Long-term value: 0.002 mg/m³ as Pt		
EL (Canada)	Long-term value: 0.002 mg/m³ as Pt; S		
EV (Canada)	Long-term value: 0.002 mg/m³ as Pt		
Additional information: No data			
Exposure controls			
Personal protective equipment			
General protective and hygienic measures			
The usual precautionary measures for handling chemicals should be followed.			
Keep away from foodstuffs, beverages and feed.			
Remove all soiled and contaminated clothing immediately.			
Wash hands before breaks and at the end of work.			
Avoid contact with the eyes and skin.			
Maintain an ergonomically appropriate working environment.			
Breathing equipment: Use suitable respirator when high concentrations are present.			
Recommended filter device for short term use:			
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.			
Protection of hands:			
Impervious gloves			
Check protective gloves prior to each use for their proper condition.			
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.			
Material of gloves Nitrile rubber, NBR			
Penetration time of glove material (in minutes) 480			
Glove thickness 0.11 mm			
Eye protection:			
Tightly sealed goggles			
Full face protection			
Body protection: Protective work clothing.			
9 Physical and chemical properties			
Information on basic physical and chemical properties			
General Information			
Appearance:			
Form:		Crystalline	
Color:		Orange to brown	
Odor:		Odorless	
Odor threshold:		Not determined.	
pH-value:		Not applicable.	
Change in condition			
Melting point/Melting range:		370 °C (698 °F) (dec)	
Boiling point/Boiling range:		Not determined	
Sublimation temperature / start:		Not determined	
Flammability (solid, gaseous)		Not determined.	
Ignition temperature:		Not determined	
Decomposition temperature:		Not determined	
Auto igniting:		Not determined.	
Danger of explosion:		Not determined.	
Explosion limits:			
Lower:		Not determined	
Upper:		Not determined	
Vapor pressure:		Not applicable.	
Density at 20 °C (68 °F):		4.303 g/cm³ (35.909 lbs/gal)	
Relative density		Not determined.	
Vapor density		Not applicable.	
Evaporation rate		Not applicable.	
Solubility in / Miscibility with			
Water at 25 °C (77 °F):		587 g/l	
Partition coefficient (n-octanol/water):		Not determined.	
Viscosity:			
dynamic:		Not applicable.	
kinematic:		Not applicable.	
Other information		No further relevant information available.	
10 Stability and reactivity			
Reactivity No information known.			
Chemical stability Stable under recommended storage conditions.			
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.			
Possibility of hazardous reactions Reacts with strong oxidizing agents			
Conditions to avoid No further relevant information available.			
Incompatible materials:			
Water/moisture			
Oxidizing agents			
Hazardous decomposition products:			
Hydrogen chloride (HCl)			
Platinum oxide			
11 Toxicological information			
Information on toxicological effects			
Acute toxicity:			
Toxic if swallowed.			
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.			
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.			
LD/LC50 values that are relevant for classification:			
Oral	LD50	276 mg/kg (rat)	
			(Contd. on page 4)

Product name: **Platinum(IV) chloride**

(Contd. of page 3)

Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.





12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.



13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number DOT, IMDG, IATA	UN2923
UN proper shipping name DOT IMDG, IATA	Corrosive solids, toxic, n.o.s. (Platinum(IV) chloride) CORROSIVE SOLID, TOXIC, N.O.S. (Platinum(IV) chloride)
Transport hazard class(es) DOT	
 	
Class Label Class Label IMDG, IATA	8 Corrosive substances. 8+6.1 8 (CT2) Corrosive substances 8+6.1
 	
Class Label	8 Corrosive substances. 8+6.1
Packing group DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user EMS Number:	Warning: Corrosive substances F-A,S-B
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN2923, Corrosive solids, toxic, n.o.s. (Platinum(IV) chloride), 8 (6.1), III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms

GHS05 GHS06 GHS08
Signal word Danger
Hazard statements
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.

(Contd. on page 5)
USA

Product name: Platinum(IV) chloride

(Contd. of page 4)

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
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.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

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

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/24/2015 / -

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

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)