Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

1970

Platinum Ruthenium Bath

Date Prepared : 17.05.2024
Revision : 0
Revision date : -
SDS Number : GBF - 4911

1- IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

1.1- Product Identifier:

Product Name	**PT 2+1 Platinum Ruthenium Bath**
UFI Code	No data available
Nanoform	The product does not contain nanoparticles.

1.2- Relevant identified uses of the substance advised against:

Identified uses	Electroplating Solution
Used advised against	No data available

1.3- Details of the supplier of the safety data sheet:

Company	**Durston Tools**
Address	Desborough Park Road, High Wycombe, Buckinghamshire, HP12 3DJ
Tel/Fax	+44 (0)1494 342 069
E-mail	support@durston.com

1.4- Emergency telephone number:

+44 (0)1494 342 069

2- HAZARDS IDENTIFICATION

2.1- Classification of the substance or mixture:

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1, H314
Skin Sensitizer, Category 1, H317

Notes: For the full text of the H sentences mentioned in this Section, see Section 16.

2.2- Label elements (according to EC 1272/2008):

GHS Pictograms

Signal word Danger

Hazard statements

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for

breathing.

P310 Immediately call a POISON CENTER or doctor / physician.

Contains: Sulphuric acid, Dipotassium platinate, Rhutenium trichloride

2.3- Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0.1%.

The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

3- COMPOSITION/INFORMATION ON INGREDIENTS

3.1- Substance

Not applicable

3.2- Mixture

Components:

Chemical Name	EC No.	CAS No.	%	Classification
Sulphuric acid	231-639-5	7664-93-9	10	Skin Corr. 1A, H314
Dipotassium platinate	235-554-4	12285-90-4	3	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 STOT SE 3, H335
Sulphamic acid	226-218-8	5329-14-6	0,2-0,33	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412
Ammonium sulphamate	231-871-7	7773-06-0	0,1-0,2	Acute Tox. 4, H302
Rhutenium trichloride	233-167-5	10049-08-8	0,1-0,2	Acute Tox. 4, H302 Skin Corr 1B, H314 Eye Dam. 1, H318 Aquatic Chronic 2, H411

Chemical Name	EC No.	CAS No.	Specific concentration limits	M-Factors	ATE
Sulphuric acid	231-639-5	7664-93-9	Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %	-	-

Notes: For the full text of the H sentences mentioned in this Section, see Section 16.

4- FIRST AID MEASURES

4.1- Description of first aid measures

Eye contact: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

Skin contact: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

Ingestion: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

Inhalation: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

For symptoms and effects caused by the contained substances, see chap. 11.

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

Information not available.

5- FIRE FIGHTING MEASURES

5.1- Extinguishing Media

Suitable extinguishing equipment

Choose the most appropriate extinguishing equipment for the specific case.

Unsuitable extinguishing equipment

None in particular.

5.2- Special hazards arising from the substance or mixture

The product is neither flammable nor combustible.

5.3- Advice for firefighters

Special protective equipment for fire-fighters

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

6- ACCIDENTAL RELEASE MEASURES

6.1- Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2- Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3- Methods and materials for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Check incompatibility for container material in section 7.
Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4- References to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

7- HANDLING AND STORAGE

7.1- Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2- Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3- Specific end use(s)

Information not available.

8- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1- Control parameters

Regulatory References:

United Kingdom	EH40/2005 Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended).
Eire	Code of Practice Chemical Agent Regulations 2011.
OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
TLV-ACGIH	ACGIH 2022

SULPHURIC ACİD

Threshold Limit Value. Tip	Country	TWA/8h mg/m³	ppm	STEL/15min mg/m³	ppm
OEL	EU	0,05			
OEL	IRL	0,05	1		
TLV-ACGIH		0,2			
WEL	UK	0,05			

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,0025	mg/L
Normal value in marine water	0,00025	mg/L
Normal value for fresh water sediment	0,002	mg/kg
Normal value for marine water sediment	0,002	mg/kg
Normal value of STP microorganisms	8,8	mg/L

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effect on consumers				Effect on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation					0,1 mg/m³	VND	0,05 mg/m³	VND

DIPOTASSIUM PLATINATE

Threshold Limit Value. Tip	Country	TWA/8h mg/m³	ppm	STEL/15min mg/m³	ppm
TLV-ACGIH		0,002			

AMMONIUM SULPHAMATE

Threshold Limit Value. Tip	Country	TWA/8h mg/m³	ppm	STEL/15min mg/m³	ppm
TLV-ACGIH		10			
OEL	IRL	10		20	
WEL	UK	10		20	

Legend:
(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.
VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2- Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Hand protection:

Protect hands with class L work gloves (eg. butyl rubber, fluororubber) (see standard EN 374). The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability. The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

Skin protection

Wear professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Eye protection:

Wear a hood visor or protective visor combined with airtight goggles (see standard EN 166).

Respiratory protection:

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

8.3- Environmental exposure controls

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

9- PHYSICAL AND CHEMICAL PROPERTIES

9.1- Information on basic physical and chemical properties

Physical State	Liquid
Colour	Dark brown
Odour	Not available.
Odour threshold.	0-1
pH (solution)	Not available.
Melting Point	Not available.
Boiling Point	Not available.
Evaporation Rate (Water=1)	Not available.
Flammability, solid/gas	Not available.
Flash Point (°C)	Not available.
Flammability Limits in Air, % vol.	
Lower Explosive Limit	Not available.
Upper Explosive Limit	Not available.

Auto-Ignition Temperature	Not available.
Vapour pressure.	Not available.
Vapour density (Air= 1)	Not available.
Relative Density	1,08 - 1,12 g/cm3
Solubility	Not available.
Partition Coefficient (n-octanol/water)	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.

9.2- Other information:

9.2.1- Information with regard to physical hazard classes:

No data available

9.2.2- Other safety characteristics:

Explosive properties	No explosive properties.
Oxidising property	No oxidizing property.

10- STABILITY AND REACTIVITY

10.1- Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.
Contains SULPHURIC ACID: decomposes at 450°C.
Contains SULPHAMIC ACID: decomposes at 205°C.

10.2- Chemical stability

Stable under recommended handling and storage conditions.

10.3- Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.
Contains SULPHAMIC ACID: risk of explosion on contact with chlorine. Reacts dangerously with metal nitrites and nitrates.

10.4- Conditions to avoid

The usual precautions used for chemical products should be respected.
Avoid contact with oxidants. Upon contact with oxidants rhutenium tetraoxide may be formed.

10.5- Incompatible materials

Contains: SULPHURIC ACID: flammable substances, reducing substances, basic substances, metals, organic substances and water.
Oxidizing substances.
Contains SULPHAMIC ACID: chlorine, nitric acid, sodium nitrites and nitrates, potassium.

10.6- Hazardous decomposition products

Contains: SULPHURIC ACID: sulphur oxide.
When heated or in case of fire the product can release vapors potentially dangerous to health (eg. hydrochloric acid).
SULPHAMIC ACID: sulphur oxides and nitric oxides.

11- TOXICOLOGICAL INFORMATION

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

Acute toxicity

Sulphuric Acid (CAS# 7664-93-9)	
LD50 oral (rat)	2.140 mg/kg bw
LC50 inhalation (rat)	375 mg/m^3, air
Sulphamic Acid (CAS# 5329-14-6)	
LD50 oral (rat)	2.140 mg/kg bw
LD50 dermal (rat)	> 2.000 mg/kg bw

Skin corrosion/irritation

Causes severe skin burns damage.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory or Skin Sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

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

Carcinogenity

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

Reproductive toxicity

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

Specific Target Organ Toxicity (Single Exposure)

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

Specific Target Organ Toxicity (Repeated Exposure)

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

Aspiration Hazard

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

11.2- Information on other hazards

11.2.1- Endocrine disrupting properties

No test data is available for the mixture.

11.2.2- Other information

No test data is available for the mixture.

12- ECOLOGICAL INFORMATION

12.1- Toxicity

Sulphuric Acid (CAS# 7664-93-9)		
LC50 Fish	> 16 - < 28 mg/l, 96 Hours	(Lepomis macrochirus)
LC50 Aquatic invertebrates	> 100 mg/l, 48 Hours	(Daphnia magna)
EC50 Algae	> 100 mg/l, 72 Hours	(Desmodesmus subspicatus)
Sulphamic Acid (CAS# 5329-14-6)		
LC50 Fish	70,3 mg/l, 96 Hours	(Pimephales promelas)
LC50 Aquatic invertebrates	71,6 mg/l, 24 Hours	(Daphnia magna)
EC50 Algae	48 mg/l, 72 Hours	(Desmodesmus subspicatus)

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

This product does not contain any substances classified as PBT or vPvB.

12.6- Endocrine disrupting properties

No data available.

12.7- Other adverse effects

No data available.

13- DISPOSAL CONSIDERATIONS

13.1- Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Avoid littering. Do not contaminate soil, sewers and waterways.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

14- TRANSPORT INFORMATION

Land transport (ADR/RID)

14.1-	UN number	UN3264
14.2-	UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid)
14.3-	Transport hazard class(es)	8
14.4-	Packing Group	II
14.5-	Environmental hazard	Yes
14.6-	Maritime transport in bulk according to IMO instruments	Not applicable.
	Limited Quantity (ADR/RID)	1 L
	Exceptional amount (ADR/RID)	E2
	Tank code (ADR/RID)	L4BN
	Tunnel code	2 (E)
	Orange plate	80 / 3264

Sea transport (IMDG Code)

14.1-	UN number	UN3264

14.2-	UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid)
14.3-	Transport hazard class(es)	8
14.4-	Packing Group	II
14.5-	Environmental hazard	Yes
	Marine pollutant:	Yes
14.6-	Maritime transport in bulk according to IMO instruments	Not applicable.
	Limited Quantity (IMDG)	1 L
	Exceptional amount (IMDG)	E2
	EmS No (Fire)	F-A
	N*FS (Spill)	S-B

Air transport (ICAO-IATA/DGR)

14.1-	UN number	UN3264
14.2-	UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid)
14.3-	Transport hazard class(es)	8
14.4-	Packing Group	II
14.5-	Environmental hazard	Not hazardous.
14.6-	Maritime transport in bulk according to IMO instruments	Not applicable.

15- REGULATORY INFORMATION

15.1- Safety, health and environmental regulations/legislations specific for the substance or mixture

- Regulation (EC) No 1907/2006, (REACH),
- Commission Regulation (EU) No 453/2010 amending Regulation (EC) No 1907/2006,
- Regulation (EC) No 1272/2008 (CLP),
- Commission Directive 2006/15/EC,
- Commission Directive 2000/39/EC.
- ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

15.2- Chemical safety assessment

No chemical safety assessment has been processed for the mixture and the substances it contains.

16- OTHER INFORMATION

Full text of any H- & EUH-statements not written out in full under Sections 2 to 15

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

List of abbreviations

ADN	European Agreement concerning the international Carriage of Dangerous Goods by Inlands Waterways
ADR	European Agreement Concerning the Int. Carriage of Dangerous Goods by Road
CAS No	Chemical Abstract Service Index Number
CLP	Regulation of Classification, Labelling and Packaging of Chemicals
CLP	Regulation of Classification, Labelling and Packaging of Chemicals
EC No	Identifier in ESIS (European archive of existing substances)
EmS	Emergency Schedule
IATA DGR	International Air Transport Association Dangerous Goods Regulation
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Dosage producing 50% mortality
PBT	Persistent Bioaccumulative Toxic
RID	International Rule for Transport of Dangerous Substances by Railway
STEL	Short-term exposure limit
TWA	Time-weighted average exposure limit
vPvB	Very Persistent, Very Bioaccumulative

Other Information:

Date Prepared	May. 17th, 2024
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Organized by	Gultekin Baskoylu (Chemist)

Sources of information:

- ECHA and related EU directives,
- UN ADR, IMDG, IATA lists,
- Safety data sheets for raw materials and product components,
- Other helpful resources.

Note for users

The information, recommendations and suggestions herein are believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by TWL as to the effects of such use, the results obtained or the safety and toxicity of the product nor does TWL per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.