PMD (UK) LIMITED

SAFETY DATA SHEET
GILDAURA 5N ELECTROLYTE SALT

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

1.1. Product identifier

Product name GILDAURA 5N ELECTROLYTE SALT

Product number 039010,039011,039012,998 134

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

Identified uses Plating agents and metal surface treating agents.

1.3. Details of the supplier of the safety data sheet

Supplier

PMD (UK) Limited
Broad Lane
Coventry
CV5 7AY
Tel: 024 764 666 91
Fax: 024 764 730 34

stevel@pmdgroup.co.uk

1.4. Emergency telephone number

Emergency telephone 024 764 666 91 (Mon-Fri 8.30-17.00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards Not Classified

Health hazards Acute Tox. 3 - H301 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Carc. 1B - H350 Repr. 1B - H360FD

Environmental hazards Aquatic Chronic 2 - H411

Classification (67/548/EEC or 1999/45/EC) Carc. Cat. 2;R45,Repr. Cat. 2;R60,R61. Xn;R22. Xi;R36. N;R51/53. R32.

2.2. Label elements

Pictogram

Signal word Danger

GILDAURA 5N ELECTROLYTE SALT

Hazard statements	H301 Toxic if swallowed. H312+H332 Harmful in contact with skin or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation. H350 May cause cancer. H360FD May damage fertility. May damage the unborn child. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing vapour/spray. P264 Wash contaminated skin thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. 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.
Supplemental label information	RCH002b For professional users only. EUH032 Contact with acids liberates very toxic gas.
Contains	POTASSIUM CYANATE, BORIC ACID, E.D.T.A disodium salt. dihydrate, GOLD POTASSIUM CYANIDE, ORGANIC CADMIUM SALT
Supplementary precautionary statements	P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P302+P352 IF ON SKIN: Wash with plenty of water. P308+P313 IF exposed or concerned: Get medical advice/attention. P312 Call a POISON CENTER/doctor if you feel unwell. P337+P313 If eye irritation persists: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage. P405 Store locked up. P501 Dispose of contents/container in accordance with national regulations.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

POTASSIUM CYANATE **10-30%**

CAS number: 590-28-3 EC number: 209-676-3 REACH registration number: 01-2119555275-36-XXXX

Classification	Classification (67/548/EEC or 1999/45/EC)
Acute Tox. 4 - H302 Eye Irrit. 2 - H319	Xn;R22

SODIUM CARBONATE **10-30%**

CAS number: 497-19-8 EC number: 207-838-8 REACH registration number: 01-2119485498-19-XXXX

Classification	Classification (67/548/EEC or 1999/45/EC)
Eye Irrit. 2 - H319	Xi;R36

GILDAURA 5N ELECTROLYTE SALT

BORIC ACID **10-30%**

CAS number: 10043-35-3 EC number: 233-139-2 REACH registration number: 01-2119486683-25-XXXX

Classification
Repr. 1B - H360FD

Classification (67/548/EEC or 1999/45/EC)
Repr. Cat. 2;R60,R61

E.D.T.A disodium salt. dihydrate **5-10%**

CAS number: 6381-92-6 EC number: 205-358-3 REACH registration number: 01-2119486775-20-XXXX

Classification
Acute Tox. 4 - H332
STOT RE 2 - H373

Classification (67/548/EEC or 1999/45/EC)
Xn;R20.

GOLD POTASSIUM CYANIDE **1-5%**

CAS number: 13967-50-5 EC number: 237-748-4

M factor (Chronic) = 1

Classification
Acute Tox. 2 - H300
Acute Tox. 2 - H310
Acute Tox. 2 - H330
Aquatic Chronic 1 - H410

Classification (67/548/EEC or 1999/45/EC)
T;R23/24/25. N;R50/53. R32.

ORGANIC COPPER SALT **1-5%**

CAS number: 14552-35-3 EC number: 238-597-7

Classification
Skin Corr. 1B - H314
Eye Dam. 1 - H318

Classification (67/548/EEC or 1999/45/EC)
Xn;R20/21/22. Xi;R36/37/38.

ORGANIC CADMIUM SALT **<1%**

CAS number: —

M factor (Chronic) = 10

Classification
Acute Tox. 2 - H330
Muta. 2 - H341
Carc. 1B - H350
Repr. 2 - H361
STOT RE 1 - H372
Aquatic Chronic 1 - H410

Classification (67/548/EEC or 1999/45/EC)
Carc. Cat. 2;R45. Xn;R20/21/22.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

GILDAURA 5N ELECTROLYTE SALT

General information CAUTION! First aid personnel must be aware of own risk during rescue! Remove affected person from source of contamination. Get medical attention.

Inhalation Move affected person to fresh air at once. Get medical attention. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Ingestion Get medical attention immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. Remove affected person from source of contamination. Give plenty of water to drink. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Skin contact Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Remove affected person from source of contamination. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

Inhalation Harmful by inhalation.

Ingestion Toxic if swallowed.

Skin contact The product is irritating to eyes and skin.

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

Specific treatments Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Do not touch or walk into spilled material. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Inform authorities if large amounts are involved.

6.4. Reference to other sections

SECTION 7: Handling and storage

GILDAURA 5N ELECTROLYTE SALT

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Provide adequate ventilation. Avoid inhalation of vapours. Use approved respirator if air contamination is above an acceptable level.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store in closed original container at temperatures between 5°C and 30°C.

Storage class Toxic storage.

7.3. Specific end use(s)

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

GOLD POTASSIUM CYANIDE

Long-term exposure limit (8-hour TWA): WEL 5 mg/m3(Sk)

ORGANIC COPPER SALT

Long-term exposure limit (8-hour TWA): WEL 0.1(Cu) mg/m³

ORGANIC CADMIUM SALT

Long-term exposure limit (8-hour TWA): WEL 0.025(Cd) mg/m³

WEL = Workplace Exposure Limit

POTASSIUM CYANATE (CAS: 590-28-3)

DNEL
Workers - Inhalation; Long term systemic effects: 25 mg/m³
Workers - Inhalation; Short term systemic effects: 81.8 mg/m³
Workers - Dermal; Long term systemic effects: 28.57 mg/kg/day
Workers - Dermal; Short term systemic effects: 100 mg/kg/day

PNEC
- Fresh water; 0.018 mg/l
- Marine water; 0.0018 mg/l
- Intermittent release; 0.18 mg/l
- STP; 100 mg/l
- Sediment (Freshwater); 0.0914 mg/kg
- Sediment (Marinewater); 0.00914 mg/kg
- Soil; 0.0078 mg/kg

BORIC ACID (CAS: 10043-35-3)

DNEL
Industry - Inhalation; Long term systemic effects: 8.3 mg/m³
Industry - Dermal; Long term systemic effects: 3924800 mg/kg/day
Consumer - Oral; Short term systemic effects: 0.98 mg/kg/day
Consumer - Dermal; Long term local effects: 196 mg/kg/day
Consumer - Dermal; Long term systemic effects: 0.98 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 4.15 mg/m³
Consumer - Oral; Long term systemic effects: 0.98 mg/kg/day

PNEC
- Fresh water; 1.35 mg/l
- Marine water; 1.35 mg/l
- water; Intermittent release 9.1 mg/l
- Sediment; 1.8 mg/kg
- STP; 1.75 mg/l

GILDAURA 5N ELECTROLYTE SALT

SODIUM CARBONATE (CAS: 497-19-8)

DNEL Workers - Inhalation; Long term local effects: 10 mg/m³

E.D.T.A disodium salt. dihydrate (CAS: 6381-92-6)

Ingredient comments No exposure limits known for ingredient(s).

DNEL Workers - Inhalation; Long term local effects: 1.5 mg/m³
Workers - Inhalation; Short term local effects: 3 mg/m³

PNEC
- Fresh water; 2.2 mg/l
- Marine water; 0.22 mg/l
- Intermittent release; 1.2 mg/l

ORGANIC CADMIUM SALT

DNEL Workers - Inhalation; Long term systemic effects: 0.004 mg/m³

PNEC
- Fresh water; 0.19 µg/l
- Marine water; 1.14 µg/l
- STP; 20 µg/l
- Sediment (Freshwater); 1.8 mg/kg
- Sediment (Marinewater); 0.64 mg/kg
- Soil; 0.9 mg/kg

8.2. Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate general and local exhaust ventilation.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Dust-resistant, chemical splash goggles.

Hand protection Use protective gloves.

Other skin and body protection Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures Use engineering controls to reduce air contamination to permissible exposure level. Do not smoke in work area. Wash hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap and water if skin becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

Respiratory protection Wear a suitable dust mask.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance Dusty powder.

Colour Various colours.

GILDAURA 5N ELECTROLYTE SALT

pH	pH (concentrated solution): pH (diluted solution): 6-9 @ 5%
Solubility(ies)	Soluble in water.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

10.2. Chemical stability

Stability	Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Conditions to avoid	Avoid contact with acids. Generates very toxic gas in contact with acid.

10.5. Incompatible materials

10.6. Hazardous decomposition products

Hazardous decomposition products	Toxic gases/vapours/fumes of: Hydrogen cyanide (HCN).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg)	185.98

Acute toxicity - dermal

ATE dermal (mg/kg)	1,976.28

Acute toxicity - inhalation

ATE inhalation (gases ppm)	3,646.68
ATE inhalation (vapours mg/l)	16.87
ATE inhalation (dusts/mists mg/l)	1.66

General information	Known or suspected mutagen.
Inhalation	Harmful by inhalation.
Ingestion	Toxic if swallowed.
Skin contact	Harmful in contact with skin.
Eye contact	Severe irritation, burning and tearing.
Acute and chronic health hazards	Known or suspected mutagen. Contains a substance/a group of substances which may cause cancer.
Route of entry	Inhalation Skin absorption Ingestion. Skin and/or eye contact

Toxicological information on ingredients.

SODIUM CARBONATE

Skin contact	Irritating to skin.

GILDAURA 5N ELECTROLYTE SALT

Eye contact	Irritating to eyes.

BORIC ACID

Inhalation	Harmful by inhalation.
Ingestion	Harmful if swallowed.
Skin contact	Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
Eye contact	Irritating to eyes.
Acute and chronic health hazards	Known or suspected mutagen.
Target organs	No specific target organs known.

GOLD POTASSIUM CYANIDE

Inhalation	Very toxic by inhalation. Unconsciousness, possibly death.
Ingestion	Very toxic if swallowed. Unconsciousness, possibly death.
Skin contact	Toxic through skin absorption (percutaneous).
Eye contact	Severe irritation, burning and tearing.
Acute and chronic health hazards	Gas or vapour is toxic or extremely irritating, even on brief exposure. Gas or vapour displaces oxygen available for breathing (asphyxiant). This chemical can be hazardous when inhaled and/or touched. Toxic through skin absorption (percutaneous). Repeated exposure may cause chronic eye irritation. Exposure may cause: Unconsciousness. Death.
Route of entry	Inhalation Skin absorption Ingestion. Skin and/or eye contact
Medical symptoms	Cyanosis (blue tissue condition - nails, lips and/or skin).

ORGANIC CADMIUM SALT

Acute toxicity - inhalation

ATE inhalation (dusts/mists mg/l)	0.05

SECTION 12: Ecological Information

Ecotoxicity	The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Ecological information on ingredients.

GOLD POTASSIUM CYANIDE

Ecotoxicity	Dangerous for the environment if discharged into watercourses.

12.1. Toxicity

Ecological information on ingredients.

GILDAURA 5N ELECTROLYTE SALT

BORIC ACID

Acute toxicity - fish	LC_{50}, 96 hours: 456 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 760 mg/l, Daphnia magna

GOLD POTASSIUM CYANIDE

Toxicity	Very toxic to aquatic organisms.
Acute aquatic toxicity	
$LE(C)_{50}$	0.1 < L(E)C50 ≤ 1
Chronic aquatic toxicity	
NOEC	0.01 < NOEC ≤ 0.1
Degradability	Non-rapidly degradable
M factor (Chronic)	1

ORGANIC CADMIUM SALT

Chronic aquatic toxicity	
NOEC	0.001 < NOEC ≤ 0.01
Degradability	Non-rapidly degradable
M factor (Chronic)	10

12.2. Persistence and degradability

12.3. Bioaccumulative potential

Ecological information on ingredients.

BORIC ACID

Bioaccumulative potential	The product is not bioaccumulating.

12.4. Mobility in soil

Ecological information on ingredients.

BORIC ACID

Mobility	Mobile.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

GILDAURA 5N ELECTROLYTE SALT

UN No. (ADR/RID)	3077
UN No. (IMDG)	3077
UN No. (ICAO)	3077

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Gold potassium cyanide)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Gold potassium cyanide)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Gold potassium cyanide)
Proper shipping name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Gold potassium cyanide)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID subsidiary risk	
ADR/RID label	9
IMDG class	9
IMDG subsidiary risk	
ICAO class/division	9
ICAO subsidiary risk	

Transport labels

14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS	F-A, S-F
Emergency Action Code	2Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

GILDAURA 5N ELECTROLYTE SALT

SECTION 15: Regulatory information

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

National regulations Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

SECTION 16: Other information

Key literature references and sources for data Dangerous Properties of Industrial Chemicals, N.Sax, Croner's: Dangerous Substances. Croner's: Emergency Spillage Guide. Croner's: Substances Hazardous to Health. Material Safety Data Sheet, Misc. manufacturers.

Revision date 16/07/2015

Revision 6

Supersedes date 27/05/2010

Risk phrases in full R20 Harmful by inhalation.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R22 Harmful if swallowed.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R32 Contact with acids liberates very toxic gas.
R36 Irritating to eyes.
R36/37/38 Irritating to eyes, respiratory system and skin.
R45 May cause cancer.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R60 May impair fertility.
R61 May cause harm to the unborn child.

GILDAURA 5N ELECTROLYTE SALT

Hazard statements in full

H300 Fatal if swallowed.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H332 Harmful if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360FD May damage fertility. May damage the unborn child.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.