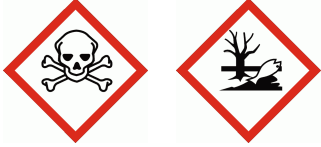


Safety Data Sheet



GP1-2N - READY TO USE GOLD PEN PLATING SOLUTION 1G/100ML GOLD 2N COLOR

Safety Data Sheet dated 1/19/2023 version 2

Compliant with regulation (CE) n. 1907/2006 REACH, Annex II, and subsequent amendments introduced by Commission Regulation (EU) no. 2015/830

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

1.1. Product identifier

Mixture identification:

Trade name: GP1-2N - READY TO USE GOLD PEN PLATING SOLUTION 1G/100ML GOLD 2N COLOR

Trade code: GP1-2N

Product type and use: SL

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

Recommended use: N.A.

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company: LEGOR GROUP S.p.A.

Via del Lavoro, 1
36050 Bressanvido (VI)
Italy
Tel.: +39.0444.467911
Fax.: +39.0444. 660677

Competent person responsible for the safety data sheet: info@legor.com

1.4. Emergency telephone number

CENTRO ANTIVELENI OSPEDALE NIGUARDA CA' GRANDA
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CORSO A.M. DOGLIOTTI, 14 TORINO
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CEN.NAZ.INFORM.TOSSIC.FOND. S.MAUGERI CLINICA DEL LAVORO E DELLA RIABILITAZIONE
VIA A.FERRATA, 8 PAVIA
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AZ. OSP. UNIV. FOGGIA

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VIA CARDARELLI, 9 NAPOLI

Tel 081 7472870 Fax 081 7472880

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Acute Tox. 3 Toxic if swallowed.
Acute Tox. 3 Toxic if inhaled.
Skin Sens. 1A May cause an allergic skin reaction.
Aquatic Chronic 2 Toxic to aquatic life with long lasting effects.
Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Danger

Hazard statements

H301 Toxic if swallowed.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Contains

Potassium cyanide
Copper iodide
EDTA bisodic salt

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazards

No PBT Ingredients are present

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: GP1-2N - READY TO USE GOLD PEN PLATING SOLUTION 1G/100ML GOLD 2N COLOR

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
< 5%	EDTA bisodic salt	CAS:6381-92-6 EC:205-358-3	Acute Tox. 4, H332; STOT RE 2, H373	
< 5%	Potassium cyanide	CAS:151-50-8	Met. Corr. 1, H290; Acute Tox. 1, H310; Acute Tox. 1, H330; Acute Tox. 1, H300; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410, M:10, EUH032	01-2119486407-29-0000
< 5%	Copper (I) cyanide	CAS:544-92-3	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 2, H300; Acute Tox. 2, H330; Acute Tox. 1, H310, EUH032	

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

Wash immediately with water.

In case of Ingestion:

Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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

N.A.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO2).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- Wear personal protection equipment.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.
- Provide adequate ventilation.
- Use appropriate respiratory protection.
- See protective measures under point 7 and 8.

For emergency responders:

- Wear personal protection equipment.

6.2. Environmental precautions

- Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
- Retain contaminated washing water and dispose it.
- In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
- Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

- Suitable material for taking up: absorbing material, organic, sand
- Wash with plenty of water.

6.4. Reference to other sections

- See also section 8 and 13
-

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Avoid contact with skin and eyes, inhalation of vapours and mists.
- Use localized ventilation system.
- Don't use empty container before they have been cleaned.
- Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
- Contaminated clothing should be changed before entering eating areas.
- Do not eat or drink while working.
- See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

- Always keep in a well ventilated place.

Incompatible materials:

- None in particular.

Instructions as regards storage premises:

- Cool and adequately ventilated.

7.3. Specific end use(s)

Recommendation(s)

- None in particular

Industrial sector specific solutions:

- None in particular
-

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

	OEL Type	Ceiling	Long Term mg/m ³	Long Term ppm	Short Term mg/m ³	Short Term ppm	Notes
Potassium cyanide CAS: 151-50-8	EU		1		5		Skin
	ACGIH	C			5		Skin - URT irr, headache, nausea, thyroid eff

8.2. Exposure controls

Eye protection:

- Use close fitting safety goggles, don't use eye lens.

Protection for skin:

- Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

- Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use adequate protective respiratory equipment.

Thermal Hazards:

N.A.

Environmental exposure controls:

N.A.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Appearance and colour: Colourless liquid

Odour: Odourless

Odour threshold: N.A.

pH: 8,00

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: N.A.

Evaporation rate: N.A.

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: N.A.

Relative density: 1,01 g/cm³

Solubility in water: Total

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): N.A.

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Viscosity: N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Solid/gas flammability: N.A.

9.2. Other information

VOC N.A.

Substance Groups relevant properties N.A.

Miscibility: N.A.

Conductivity: N.A.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Data not available.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information of the Preparation

- | | |
|----------------------------------|---|
| a) acute toxicity | The product is classified: Acute Tox. 3(H301), Acute Tox. 3(H331) |
| b) skin corrosion/irritation | Not classified |
| | Based on available data, the classification criteria are not met |
| c) serious eye damage/irritation | Not classified |

	Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1A(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

Potassium cyanide	a) acute toxicity	LD50 Oral Rat = 7.49 mg/kg
		LC50 Inhalation Rat = 63 Ppm 1h
		LD50 Skin Rabbit = 11.3 mg/kg

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Toxic to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 2(H411)

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
Potassium cyanide	CAS: 151-50-8	a) Aquatic acute toxicity : LC50 Fish = 0.045 mg/l 96 a) Aquatic acute toxicity : EC50 Daphnia = 0.083 mg/l 48 a) Aquatic acute toxicity : EC10 Algae = 0.158 mg/l 72 a) Aquatic acute toxicity : EC50 Algae = 0.331 mg/l 72

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT Ingredients are present

12.6. Other adverse effects

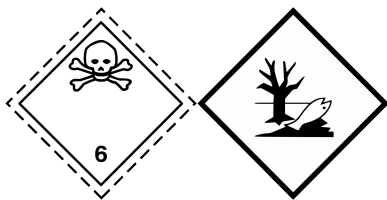
N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

**14.1. UN number**

1935

14.2. UN proper shipping name

ADR-Shipping Name: CYANIDE SOLUTION, N.O.S. (Potassium cyanide - Potassium dicyanoaurate (I))

IATA-Technical name: CYANIDE SOLUTION, N.O.S. (Potassium cyanide, Potassium dicyanoaurate (I))

IMDG-Technical name: CYANIDE SOLUTION, N.O.S. (Potassium cyanide, Potassium dicyanoaurate (I))

14.3. Transport hazard class(es)

ADR-Class: 6.1

IATA-Class: 6.1

IMDG-Class: 6.1

14.4. Packing group

ADR-Packing Group: II

IATA-Packing group: II

IMDG-Packing group: II

14.5. Environmental hazards

Yes

Environmental Pollutant: Yes

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 6.1

ADR - Hazard identification number: 60

ADR-Special Provisions: 274 525

ADR-Transport category (Tunnel restriction code): 2 (D/E)

Air (IATA):

IATA-Passenger Aircraft: 654

IATA-Cargo Aircraft: 661

IATA-Label: 6.1

IATA-Subsidiary hazards: -

IATA-Erg: 6L

IATA-Special Provisions: A3

Sea (IMDG):

IMDG-Stowage Code: Category A SW2

IMDG-Stowage Note: SG35 SGG6

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 274

IMDG-EMS: F-A, S-A

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

N.A.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)
 Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 Regulation (EU) n. 2019/521 (ATP 12 CLP)
 Regulation (EU) n. 2020/217 (ATP 14 CLP)
 Regulation (EU) n. 2020/1182 (ATP 15 CLP)
 Regulation (EU) n. 2021/643 (ATP 16 CLP)
 Regulation (EU) 2015/830

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: 75

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

SVHC Substances:

No data available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Code	Description
EUH032	Contact with acids liberates very toxic gas.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
3.1/1/Dermal	Acute Tox. 1	Acute toxicity (dermal), Category 1
3.1/1/Inhal	Acute Tox. 1	Acute toxicity (inhalation), Category 1
3.1/1/Oral	Acute Tox. 1	Acute toxicity (oral), Category 1
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/2/Oral	Acute Tox. 2	Acute toxicity (oral), Category 2
3.1/3/Inhal	Acute Tox. 3	Acute toxicity (inhalation), Category 3
3.1/3/Oral	Acute Tox. 3	Acute toxicity (oral), Category 3
3.1/4/Inhal	Acute Tox. 4	Acute toxicity (inhalation), Category 4
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
3.9/2	STOT RE 2	Specific target organ toxicity — repeated exposure, Category 2
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
--	---------------------------------

3.1/3/Oral	Calculation method
3.1/3/Inhal	Calculation method
3.4.2/1A	Calculation method
4.1/C2	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

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

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care

KAFH: KAFH

KSt: Explosion coefficient.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/A: Not Applicable

N/D: Not defined/ Not available

NA: Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level

OSHA: Occupational Safety and Health Administration.

PBT: Persistent, Bioaccumulative and Toxic

PGK: Packaging Instruction

PNEC: Predicted No Effect Concentration.

PSG: Passengers

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STEL: Short Term Exposure limit.

STOT: Specific Target Organ Toxicity.

TLV: Threshold Limiting Value.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

vPvB: Very Persistent, Very Bioaccumulative.

WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING
- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 14. TRANSPORT INFORMATION
- 15. REGULATORY INFORMATION
- 16. OTHER INFORMATION