

SAFETY DATA SHEET

Version: 3.0
Date Updated: October 4, 2019
Date Printed: Time:

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: GoldEnhance™ EM Plus
Catalog Number: 2114-8ML

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

Identified uses

Relevant identified uses

Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company: Nanoprobes
Address: 95 Horseblock Road, Unit 1
Yaphank, NY 11980
United States
Technical Phone: 877-447-6266, +1 (631) 205-9490
Fax: +1 (631) 205-9493
Emergency Phone: +1 (631) 205-9490
Web Site: www.nanoprobes.com

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Highly flammable liquid and vapor (Cat 2), H225
Corrosive to metals (Category 1), H290
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Dermal (Category 4), H312
Skin Corr. 1A H314
Skin irritation (Category 2), H315
Skin Sens. 1 H317
Eye Dam. 1 H318
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351

Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Nervous system, H373

Acute aquatic toxicity (Category 1), H400

2.2 GHS Label elements, including precautionary statements

Hazard statement(s)

H290 May be corrosive to metals.

H302 + H312 Harmful if swallowed or in contact with skin

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332: Harmful if inhaled (Cat 4).

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P234 Keep only in original container.

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

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P314 Get medical advice/ attention if you feel unwell.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P390 Absorb spillage to prevent material damage.

P391 Collect spillage.

P410 Protect from sunlight.

P501 Dispose of contents/ container to an approved waste disposal plant.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Hazardous components

Component	Classification	Concentration and Volume
2-Propanol		
CAS-No. 67-63-0 EC-No. 200-661-7 Index-No. 603-117-00-0	Flam. Liq. 3; Eye Irrit. 2A; STOT SE 3; H225, H319, H336	30% (v/v) in water in 2 mL of GoldEnhance™ EM Plus - Solution B (Activator)
Hydrogen tetrachloroaurate (III)		
CAS-No. 27988-77-8 EC-No. 240-948-4	Skin Corr. 1A H314; Skin Sens. 1 H317; Eye Dam. 1 H318	< 1% (w/v) in 2 mL of GoldEnhance™ EM Plus - Solution A (Enhancer),
Hydroxylammonium chloride		
CAS-No. 5470-11-1 EC-No. 226-798-2 Index-No. 612-123-00-2	Met. Corr. 1; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 2; STOT RE 2; Aquatic Acute 1; H290, H302 + H312, H315, H317, H319, H351, H373, H400	< 1% (w/v) in 2 mL of GoldEnhance™ EM Plus - Solution C (Initiator),

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	Exposure limits
2-Propanol	ACGIH TLV (United States, 3/2012). Absorbed through skin
	TWA: 200 ppm 8 hour(s).
	TWA: 262 mg/m ³ 8 hour(s).
	STEL: 400 ppm 15 minute(s).
	STEL: 328 mg/m ³ 15 minute(s).
	OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.
	TWA: 400 ppm 8 hour(s).
	TWA: 260 mg/m ³ 8 hour(s).
	STEL: 500 ppm 15 minute(s).
	STEL: 325 mg/m ³ 15 minute(s).
	NIOSH REL (United States, 1/2013). Absorbed through skin.
	TWA: 200 ppm 10 hour(s).
	TWA: 260 mg/m ³ 10 hour(s).
	STEL: 250 ppm 15 minute(s).
	STEL: 325 mg/m ³ 15 minute(s).
OSHA PEL (United States, 6/2010).	
TWA: 200 ppm 8 hour(s).	
TWA: 260 mg/m ³ 8 hour(s).	

Consult local authorities for acceptable exposure limits.

8.2 Exposure controls

Engineering measures

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: Liquid

Color: GoldEnhance™ EM Plus - Solution A (Enhancer), yellow;
GoldEnhance™ EM Plus - Solution B (Activator), clear; GoldEnhance™ EM Plus - Solution C (Initiator), clear; GoldEnhance™ EM Plus - Solution D (Buffer), clear

b) Odour: no data available

c) Odour Threshold: no data available

d) pH: no data available

e) Melting point/freezing point: no data available

f) Initial boiling point and boiling range: no data available

g) Flash point: no data available

h) Evaporation rate: no data available

i) Flammability (solid, gas): no data available

j) Upper/lower flammability or explosive limits: no data available

k) Vapour pressure: no data available

l) Vapour density: no data available

m) Relative density: no data available

n) Solubility: all aqueous solutions

o) Partition coefficient: no data available

p) Auto-ignition 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

10. STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage condition within specified expiration date

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Avoid all sources of ignition (spark or flame) and heating.

10.5 Incompatible materials

Strong oxidizing or reducing agents, acids, thiols

10.6 Hazardous decomposition products In the event of fire

see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component 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 component 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 identified as a carcinogen or potential carcinogen by OSHA.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product

14. TRANSPORT INFORMATION

DOT (US) Note: ship under Excepted Quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

UN number: 1219

Class: 3

Packing group: III

Proper shipping name: Isopropanol

Marine pollutant: No

Poison Inhalation Hazard: No

UN number: 3264

Class: 8

Packing group: III

Proper shipping name: corrosive liquid, acidic, inorganic, N.O.S. (tetra chloroauric acid solution)

Marine pollutant: No

UN number: 2922

Class: 8 (6.1)
Packing group: III
Proper shipping name: corrosive liquid, toxic, N.O.S. (Hydroxylammonium chloride solution)
Poison Inhalation Hazard: No

IMDG **Note: ship under Excepted Quantities (EQ)**
Code: E2
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 500 g

UN number: 1219
Class: 3
Packing group: III
EMS-No: F-E, S-D
Proper shipping name: Isopropanol
Marine pollutant: No

UN number: 3264
Class: 8
Packing group: III
EMS-No: F-A, S-B
Proper shipping name: corrosive liquid, acidic, inorganic, N.O.S. (tetra chloroauric acid solution)
Marine pollutant: No

UN number: 2922
Class: 8 (6.1)
Packing group: III
EMS-No: F-A, S-B
Proper shipping name: corrosive liquid, toxic, N.O.S. (Hydroxylammonium chloride solution)
Marine pollutant: Yes

IATA **Note: ship under Excepted Quantities (EQ)**
Code: E2
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 500 g

UN number: 1219
Class: 3
Packing group: III
Proper shipping name: Isopropanol

UN number: 3264
Class: 8
Packing group: III
Proper shipping name: corrosive liquid, acidic, inorganic, N.O.S. (tetra chloroauric acid solution)

UN number: 2922
Class: 8 (6.1)
Packing group: III
Proper shipping name: corrosive liquid, toxic, N.O.S. (Hydroxylammonium chloride solution)

15. REGULATORY INFORMATION**SARA 302 Components**

No chemicals in this kit are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

2-Propanol	CAS-No. 67-63-0	Revision Date 1987-01-01
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SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

2-Propanol	CAS-No. 67-63-0	Revision Date 1987-01-01
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Pennsylvania Right To Know Components

2-Propanol	CAS-No. 67-63-0	Revision Date 1987-01-01
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New Jersey Right To Know Components

2-Propanol	CAS-No. 67-63-0	Revision Date 1987-01-01
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California Prop. 65 Components

This product does not contain chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16 Other Information**Kit Components:**

GoldEnhance™ EM Plus - Solution A (Enhancer)
GoldEnhance™ EM Plus - Solution B (Activator)
GoldEnhance™ EM Plus - Solution C (Initiator)
GoldEnhance™ EM Plus - Solution D (Buffer)

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

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. Nanoprobes Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.