

METALSTAR UV SELECT 21-2073 873 GOLD

Version 1.1 Revision Date: 03/27/2018 SDS Number: 102000029322 Date of last issue: 03/26/2018
Date of first issue: 03/26/2018

SECTION 1. IDENTIFICATION

Product name : METALSTAR UV SELECT 21-2073 873 GOLD

Product code : 046435DP0

Manufacturer or supplier's details

Company name of supplier : ECKART GmbH

Address : Guentersthal 4
Hartenstein 91235

Telephone : +499152770

Telefax : +499152777008

Emergency telephone : CHEMTREC: 800-424-9300
CHEMTREC: 1-703-527-3387 (International)

GBK Gefahrgut Buero GmbH, Ingelheim, Germany:
From outside US: (001) 352-323-3500
(First call in English, response in your language is possible)
US & Canada (toll free):1-800-5355-053

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Oral) : Category 4

Eye irritation : Category 2A

Skin sensitization : Category 1

Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms :



Signal Word : Warning

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

Hazard Statements : H302 Harmful if swallowed.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H361d Suspected of damaging the unborn child.

Precautionary Statements : **Prevention:**

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P305 + 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.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

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

Hazardous ingredients which must be listed on the label:

Copper

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1)
 1-Butanone, 2-(dimethylamino)-1-[4-(4-morpholinyl)phenyl]-2-(phenylmethyl)-
 Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-[(1-oxo-2-propen-1-yl)oxy]-
 Polyester acrylate

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous ingredients**

| Chemical name | CAS-No. | Concentration (% w/w) |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------|
| Copper | 7440-50-8 | >= 30 - < 50 |
| 2-Propenoic acid, 1,1'-[2-[[2,2-bis[[[(1-oxo-2-propen-1-yl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl] ester | 94108-97-1 | >= 20 - < 30 |
| Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) | 28961-43-5 | >= 5 - < 10 |
| Zinc | 7440-66-6 | >= 5 - < 10 |
| 1-Butanone, 2-(dimethylamino)-1-[4-(4-morpholinyl)phenyl]-2-(phenylmethyl)- | 119313-12-1 | >= 1 - < 5 |
| Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.',.alpha."-1,2,3-propanetriyltris[.omega.-[(1-oxo-2-propen-1-yl)oxy]- | 52408-84-1 | >= 1 - < 5 |
| Polyester acrylate | Not Assigned | >= 1 - < 5 |

SECTION 4. FIRST AID MEASURES

General advice : Take the victim into fresh air.
 Move out of dangerous area.
 Show this material safety data sheet to the doctor in attendance.

If inhaled : If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

In case of skin contact : Wash off immediately with soap and plenty of water.
 If skin irritation persists, call a physician.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

- If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging the unborn child.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Special powder against metal fire
Dry sand
ABC powder
- Unsuitable extinguishing media : Water
High volume water jet
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Ensure adequate ventilation.
Use personal protective equipment.
- Environmental precautions :
- Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Use mechanical handling equipment.
- Pick up and transfer to properly labeled containers.
Do not flush with water.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
- Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Keep away from heat and sources of ignition.
No smoking.
- Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being

METALSTAR UV SELECT 21-2073 873 GOLD

Version 1.1 Revision Date: 03/27/2018 SDS Number: 102000029322 Date of last issue: 03/26/2018
 Date of first issue: 03/26/2018

used.

Conditions for safe storage : Keep away from sources of ignition - No smoking.
 Do not store near combustible materials.
 Keep containers tightly closed in a cool, well-ventilated place.
 To maintain product quality, do not store in heat or direct sunlight.

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.
 Electrical installations / working materials must comply with the technological safety standards.

Technical measures/Precautions : Protect from humidity and water.

Materials to avoid : Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.
 Do not store together with oxidizing and self-igniting products.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Ingredients | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|-------------|-----------|-------------------------------|------------------------------------------------|-----------|
| Copper | 7440-50-8 | TWA | 1 mg/m ³ (Copper) | ACGIH |
| | | TWA (dust and mists) | 1 mg/m ³ (Copper) | NIOSH REL |
| | | TWA | 1 mg/m ³ (Copper) | OSHA P0 |
| | | TWA | 0.2 mg/m ³ (Copper) | ACGIH |
| | | TWA | 0.1 mg/m ³ (Copper) | OSHA P0 |
| | | TWA (Dust and mist) | 1 mg/m ³ (Copper) | ACGIH |

METALSTAR UV SELECT 21-2073 873 GOLD

Version 1.1 Revision Date: 03/27/2018 SDS Number: 102000029322 Date of last issue: 03/26/2018
 Date of first issue: 03/26/2018

| | | | | |
|------|-----------|---------------------------|-------------------------------------|-----------|
| | | TWA (Fumes) | 0.2 mg/m ³ (Copper) | ACGIH |
| | | TWA (Dust) | 1 mg/m ³ (Copper) | NIOSH REL |
| | | TWA (Mist) | 1 mg/m ³ (Copper) | NIOSH REL |
| | | TWA (dusts and mists) | 1 mg/m ³ (Copper) | OSHA Z-1 |
| | | TWA (Fumes) | 0.1 mg/m ³ (Copper) | OSHA Z-1 |
| | | TWA (Fumes) | 0.1 mg/m ³ (Copper) | OSHA P0 |
| | | TWA (Dust and mist) | 1 mg/m ³ (Copper) | OSHA P0 |
| Zinc | 7440-66-6 | TWA (total dust) | 50 Million particles per cubic foot | OSHA Z-3 |
| | | TWA (total dust) | 15 mg/m ³ | OSHA Z-3 |
| | | TWA (respirable fraction) | 5 mg/m ³ | OSHA Z-3 |
| | | TWA (respirable fraction) | 15 Million particles per cubic foot | OSHA Z-3 |

Hazardous components without workplace control parameters

| Ingredients | CAS-No. |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 2-Propenoic acid, 1,1'-[2-[[2,2-bis[[[(1-oxo-2-propen-1-yl)oxy)methyl]butoxy)methyl]-2-ethyl-1,3-propanediyl] ester | 94108-97-1 |
| Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) | 28961-43-5 |
| 1-Butanone, 2-(dimethylamino)-1-[4-(4-morpholinyl)phenyl]-2-(phenylmethyl)- | 119313-12-1 |
| Poly[oxy(methyl-1,2-ethanediyl)], .alpha.,.alpha.,.alpha."-1,2,3-propanetriyltris[.omega.-[(1- | 52408-84-1 |

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

| | |
|-----------------------------------------------|--------------|
| oxo-2-propen-1-yl)oxy]- Polyester acrylate | Not Assigned |
|-----------------------------------------------|--------------|

Personal protective equipment

Respiratory protection : Use suitable breathing protection if workplace concentration requires.
Respirator with a vapor filter (EN 141)

In the case of vapor formation use a respirator with an approved filter.

Hand protection
Material : Solvent-resistant gloves (butyl-rubber)

Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The exact break through time can be obtained from the protective glove producer and this has to be observed. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Recommended preventive skin protection Skin should be washed after contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Safety glasses
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : General industrial hygiene practice.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|--------------------------------------------------|---|-----------------------------|
| Appearance | : | liquid |
| Color | : | gold |
| Odor | : | characteristic |
| Odor Threshold | : | No data available |
| pH | : | No data available |
| Melting point/freezing point | : | No data available |
| Boiling point/boiling range | : | > 150 °C |
| | | |
| Flash point | : | > 100 °C |
| | | |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapor pressure | : | No data available |
| Relative density | : | No data available |
| Density | : | 1.4 - 1.6 g/cm ³ |
| | | |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | : | No data available |

SECTION 10. STABILITY AND REACTIVITY

| | | |
|------------------------------------|---|-----------------------------------------------------------------------------------------------------|
| Reactivity | : | No decomposition if stored and applied as directed. |
| Chemical stability | : | No decomposition if stored and applied as directed. |
| Possibility of hazardous reactions | : | Stable under recommended storage conditions. No decomposition if stored and applied as directed. |
| Conditions to avoid | : | Do not allow evaporation to dryness. No data available |

Hazardous decomposition products

| | | |
|-----------------------|---|--------------------------------------------------------------------|
| Thermal decomposition | : | Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). |
|-----------------------|---|--------------------------------------------------------------------|

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if swallowed.

Ingredients:**Copper:**

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Zinc:

Acute oral toxicity : (Rat): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5.41 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist**Skin corrosion/irritation**

Not classified based on available information.

Ingredients:**Copper:**

Remarks: May cause skin irritation in susceptible persons.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Result: Skin irritation

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Causes serious eye irritation.

Ingredients:**Copper:**

Result: Eye irritation

Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Remarks: Vapors may cause irritation to the eyes, respiratory system and the skin.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

Respiratory or skin sensitization**Skin sensitization**

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Result: May cause sensitization by skin contact.

Remarks: Causes sensitization.

May cause sensitization of susceptible persons by skin contact.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Suspected of damaging the unborn child.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

METALSTAR UV SELECT 21-2073 873 GOLD

Version 1.1 Revision Date: 03/27/2018 SDS Number: 102000029322 Date of last issue: 03/26/2018
Date of first issue: 03/26/2018

Further information**Ingredients:****Copper:**

Remarks: No data available

Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Remarks: No data available

Zinc:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:****Copper:**

M-Factor (Acute aquatic toxicity) : 10

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Toxicity to daphnia and other aquatic invertebrates : (Daphnia): 10,232.73 mg/l

Zinc:**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Persistence and degradability

No data available

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

Bioaccumulative potential

No data available

Other adverse effects

No data available

Ingredients:**Copper:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1):

Additional ecological information : No data available

Zinc:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
In accordance with local and national regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION**International Regulations**

IATA-DGR
UN/ID No. : UN 3082

METALSTAR UV SELECT 21-2073 873 GOLD

Version 1.1 Revision Date: 03/27/2018 SDS Number: 102000029322 Date of last issue: 03/26/2018
 Date of first issue: 03/26/2018

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
 (Copper metal powder)
 Class : 9
 Packing group : III
 Labels : Miscellaneous Dangerous Goods
 Packing instruction (cargo aircraft) : 964
 Packing instruction (passenger aircraft) : 964

IMDG-Code
 UN number : UN 3082
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
 N.O.S.
 (Copper metal powder)
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes
 Remarks : For single packagings <=5L / 5 kg, or combination
 packagings containing inner packagings <= 5L / 5 kg net per
 inner packaging, SV375 ADR, 2.10.2.7 IMDG-Code, A197
 IATA-DGR may be applied.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

| Ingredients | CAS-No. | Component RQ (lbs) |
|-------------|-----------|--------------------|
| Zinc | 7440-66-6 | 1000 |

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
 Serious eye damage or eye irritation
 Respiratory or skin sensitization
 Reproductive toxicity

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

| | | |
|--------|-----------|----------------|
| Copper | 7440-50-8 | >= 30 - < 50 % |
| Zinc | 7440-66-6 | >= 5 - < 10 % |

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

| | | |
|--------|-----------|---------|
| Copper | 7440-50-8 | 32.05 % |
| Zinc | 7440-66-6 | 7.28 % |

US State Regulations**Massachusetts Right To Know**

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------|
| Copper | 7440-50-8 |
| Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) | 28961-43-5 |
| Zinc | 7440-66-6 |

Pennsylvania Right To Know

| | |
|--------|-----------|
| Copper | 7440-50-8 |
|--------|-----------|

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 2-Propenoic acid, 1,1'-[2-[[2,2-bis[[[(1-oxo-2-propen-1-yl)oxy]methyl]butoxy]methyl]-2-ethyl-1,3-propanediyl] ester | 94108-97-1 |
| Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-[(1-oxo-2-propen-1-yl)oxy]-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) | 28961-43-5 |
| | Not Assigned |
| Zinc | 7440-66-6 |
| | Not Assigned |
| 1-Butanone, 2-(dimethylamino)-1-[4-(4-morpholinyl)phenyl]-2-(phenylmethyl)- | 119313-12-1 |
| Aluminum | 7429-90-5 |

California Prop. 65

WARNING: This product can expose you to chemicals including lead and cadmium, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

| | |
|--------|-----------|
| Copper | 7440-50-8 |
| Zinc | 7440-66-6 |

California Permissible Exposure Limits for Chemical Contaminants

| | |
|--------|-----------|
| Copper | 7440-50-8 |
| Zinc | 7440-66-6 |

The ingredients of this product are reported in the following inventories:

DSL : This product contains one or several components that are not on the Canadian DSL nor NDSL.

TSCA : On TSCA Inventory

EINECS : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

METALSTAR UV SELECT 21-2073 873 GOLD

| | | | |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION
Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits
 OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
 ACGIH / TWA : 8-hour, time-weighted average
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
 OSHA P0 / TWA : 8-hour time weighted average
 OSHA Z-1 / TWA : 8-hour time weighted average
 OSHA Z-3 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the

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| Version | Revision Date: | SDS Number: | Date of last issue: 03/26/2018 |
| 1.1 | 03/27/2018 | 102000029322 | Date of first issue: 03/26/2018 |

European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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