



SAFETY DATA SHEET

Issuing Date 24-May-2015

Revision Date 24-May-2015

Revision Number 0

Section 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s) 400260

Product Name UVR-182E

Contains Trimethylolpropane triacrylate, Quartz, 2-Hydroxyethyl methacrylate

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

Recommended Use UV Cure Legend Ink

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Company

Taiyo America, Inc.
2675 Antler Drive
Carson City, NV 89701
TEL: 775-885-9959

For further information, please contact

E-mail Address No information available.

1.4. Emergency telephone number

Emergency Telephone Number 775-885-9959

| | |
|--------|-----|
| Europe | 112 |
|--------|-----|

Section 2. Hazards identification

2.1. - Classification of the substance or mixture

REGULATION (EC) No 1272/2008

| | |
|-----------------------------------|------------|
| Acute Oral Toxicity | Category 4 |
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |
| Skin Sensitization | Category 1 |

Physical Hazards

None

Classification according to EU Directives 67/548/EEC or 1999/45/EC

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

Symbol(s) T - Toxic

R-code(s) Carc. cat. 1;R49 - Xi;R36/38 - R43

For the full text of the R-phrases mentioned in this Section, see Section 16

2.2. Label Elements

**Signal Word****Warning****Hazard Statements**

H302 - Harmful if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

Precautionary Statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

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

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P362 - Take off contaminated clothing and wash before reuse

2.3. Other information

Section 3. Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Chemical Name | EC-No | CAS-No | Weight % | Classification | EU - GHS Substance Classification | REACH No. |
|--------------------------------|-----------|------------|----------|-------------------|--|-------------------|
| Talc | 238-877-9 | 14807-96-6 | 10-30 | - | | No data available |
| Trimethylolpropane triacrylate | Present | 15625-89-5 | 10-30 | Xi; R36/38 R43 | Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) | No data available |
| Quartz | Present | 14808-60-7 | 5-10 | - | STOT RE 2 (H373) | No data available |
| 2-Hydroxyethyl methacrylate | 212-782-2 | 868-77-9 | 5-10 | Xi; R36/38 R43 | Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) | No data available |
| Calcium carbonate | Present | 471-34-1 | 5-10 | - | | No data available |
| Silicon dioxide | Present | 7631-86-9 | 1-5 | - | | No data available |

For the full text of the R-phrases mentioned in this Section, see Section 16

For the full text of the H-Statements mentioned in this Section, see Section 16

Section 4. First aid measures

4.1. Description of first-aid measures**General Advice**

Immediate medical attention is required. If symptoms persist, call a physician.

| | |
|-----------------------------------|---|
| Eye Contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician. |
| Skin Contact | Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician. |
| Ingestion | Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician. |
| Protection of First-aiders | Use personal protective equipment. Avoid contact with skin, eyes and clothing. |

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

Most Important Symptoms/Effects No information available.

4.3. Indication of immediate medical attention and special treatment needed

Notes to Physician May cause sensitization of susceptible persons. Treat symptomatically.

Section 5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray. Dry powder. Foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by skin contact.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

6.3. Methods and materials for containment and cleaning up

Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

6.4. Reference to other sections

See Section 12 for additional information.

Section 7. Handling and storage

7.1. Precautions for Safe Handling**Handling**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. Do not eat, drink or smoke when using this product.

Hygiene Measures

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

7.3. Specific end use(s)**Exposure Scenario**

No information available.

Other Guidelines

No information available.

Section 8. Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

| Chemical Name | EU | The United Kingdom | France | Spain | Germany |
|---|-----------------------------|---|--|--|---|
| Talc 14807-96-6 | | STEL: 3 mg/m ³ TWA: 1 mg/m ³ | | TWA: 2 mg/m ³ | |
| Quartz 14808-60-7 | | STEL: 0.3 mg/m ³ TWA: 0.1 mg/m ³ | TWA: 0.1 mg/m ³ | TWA: 0.1 mg/m ³ | |
| Calcium carbonate 471-34-1 | | TWA: 10 mg/m ³ TWA: 4 mg/m ³ | TWA: 10 mg/m ³ | | |
| Silicon dioxide 7631-86-9 | | STEL: 18 mg/m ³ STEL: 7.2 mg/m ³ TWA: 6 mg/m ³ TWA: 2.4 mg/m ³ | | | TWA: 4 mg/m ³ |
| Component | Italy | Portugal | The Netherlands | Finland | Denmark |
| Talc 14807-96-6 (10-30) | | TWA: 2 mg/m ³ | TWA: 0.25 mg/m ³ | TWA: 0.5 fiber/cm ³ TWA: 5 mg/m ³ | TWA: 0.3 fiber/cm ³ |
| Quartz 14808-60-7 (5-10) | | TWA: 0.025 mg/m ³ | TWA: 0.075 mg/m ³ | TWA: 0.05 mg/m ³ | TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³ |
| Calcium carbonate 471-34-1 (5-10) | | TWA: 10 mg/m ³ | | | |
| Silicon dioxide 7631-86-9 (1-5) | | | | TWA: 5 mg/m ³ | |
| Chemical Name | Austria | Switzerland | Poland | Norway | Ireland |
| Talc 14807-96-6 | TWA: 2 mg/m ³ | TWA: 2 mg/m ³ | TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³ | TWA: 6 mg/m ³ TWA: 2 mg/m ³ STEL: 12 mg/m ³ STEL: 4 mg/m ³ | TWA: 10 mg/m ³ TWA: 0.8 mg/m ³ |
| Quartz 14808-60-7 | TWA: 0.15 mg/m ³ | TWA: 0.15 mg/m ³ | TWA: 2 mg/m ³ TWA: 0.3 mg/m ³ TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³ | TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³ STEL: 0.9 mg/m ³ STEL: 0.3 mg/m ³ | TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³ |
| 2-Hydroxyethyl methacrylate 868-77-9 | | | | TWA: 2 ppm TWA: 11 mg/m ³ STEL: 4 ppm STEL: 16.5 mg/m ³ | |

| | | | | | |
|-------------------------------|--|--|---------------------------|---|---|
| Calcium carbonate 471-34-1 | | TWA: 3 mg/m ³ | TWA: 10 mg/m ³ | | TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³ |
| Silicon dioxide 7631-86-9 | TWA: 4 mg/m ³ TWA: 0.3 mg/m ³ | TWA: 4 mg/m ³ TWA: 0.3 mg/m ³ | | TWA: 1.5 mg/m ³ STEL: 3 mg/m ³ | TWA: 6 mg/m ³ TWA: 2.4 mg/m ³ |

Derived No Effect Level No information available
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas.
Personal protective equipment
Eye Protection Safety glasses with side-shields.
Skin and Body Protection Lightweight protective clothing.
Hand Protection Protective gloves.
Respiratory Protection If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls No information available.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State Viscous liquid
Appearance Black
Odor Slight Solvent

| <u>Property</u> | <u>Values</u> | <u>Remarks/ - Method</u> |
|---|---|--------------------------|
| pH | No data available | None known |
| Melting Point/Range | No data available | None known |
| Boiling Point/Boiling Range | No data available | None known |
| Flash Point | >200 °C / >392 °F | None known |
| Evaporation rate | No data available | None known |
| Flammability (solid, gas) | No data available | None known |
| Vapor Pressure | No data available | None known |
| Vapor Density | No data available | None known |
| Relative Density | 1.53 | None known |
| Water Solubility | No data available | None known |
| Solubility in other solvents | No data available | None known |
| Partition coefficient: n-octanol/water | No data available | None known |
| Autoignition Temperature | No data available | None known |
| Decomposition Temperature | No data available | None known |
| Viscosity | No data available | None known |
| Flammable Properties | Combustible material: may burn but does not ignite readily. | |
| Explosive Properties | No data available | |
| Oxidizing Properties | No data available | |

9.2. Other information

VOC Content (%) 0
Flammability Limits in Air No data available

Section 10. Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Incompatible products.

10.5. Incompatible materials

Oxidizing agents. Peroxides. Free radical initiators.

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides.

Section 11. Toxicological information

11.1. Information on toxicological effects**Acute Toxicity****Product Information****Inhalation**

There is no data available for this product.

Eye Contact

Causes serious eye irritation.

Skin Contact

Causes skin irritation. May cause allergic skin reaction

Ingestion

Harmful if swallowed.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------------------|----------------------|-------------------------|-----------------------|
| Trimethylolpropane triacrylate | > 5000 mg/kg (Rat) | = 5000 mg/kg (Rabbit) | |
| Quartz | = 500 mg/kg (Rat) | | |
| 2-Hydroxyethyl methacrylate | = 5050 mg/kg (Rat) | >3000 mg/kg (Rabbit) | |
| Calcium carbonate | = 6450 mg/kg (Rat) | | |
| Silicon dioxide | > 5000 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | >2.2 mg/L (Rat) 4 h |

Sensitization

May cause sensitization of susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects

No information available.

Carcinogenic Effects

This product contains crystalline silica (quartz) in a non-respirable form. Inhalation of crystalline silica is unlikely to occur from exposure to this product

Reproductive Toxicity

No information available.

Developmental Toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Target Organ Effects

Eyes. Lungs. Respiratory system.

Aspiration Hazard

No information available.

Section 12. Ecological information

12.1. Toxicity**Ecotoxicity Effects**

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

| Chemical Name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---------------|-------------------|---|----------------------------|----------------------------|
| Talc | | LC50 96 h: > 100 g/L semi-static (Brachydanio rerio) | | |

| | | | | |
|-----------------------------|---|--|--|--|
| 2-Hydroxyethyl methacrylate | | LC50 96 h: 213-242 mg/L flow-through (Pimephales promelas) LC50 96 h: = 227 mg/L (Pimephales promelas) | | |
| Silicon dioxide | EC50 72 h: = 440 mg/L (Pseudokirchneriella subcapitata) | LC50 96 h: = 5000 mg/L static (Brachydanio rerio) | | EC50 48 h: = 7600 mg/L (Ceriodaphnia dubia) |

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential.

| Chemical Name | Log Pow |
|-----------------------------|---------|
| 2-Hydroxyethyl methacrylate | 0.47 |

12.4. Mobility in soil

Adsorbs on soil.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

This product does not contain any known or suspected endocrine disruptors.

Section 13. Disposal considerations

13.1. Waste treatment methods

| | |
|--|--|
| Waste from Residues / Unused Products | Dispose of in accordance with local regulations. |
| Contaminated Packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| Other Information | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. |

Section 14. Transport information

IMDG/IMO

| | |
|---|---------------------------|
| 14.1. UN-Number | Not regulated. |
| 14.2. Proper Shipping Name | Not regulated. |
| 14.3. Hazard Class | Not regulated. |
| 14.4. Packing Group | Not regulated. |
| Description | Not applicable. |
| 14.5. Marine Pollutant | None. |
| 14.6. Special Provisions | None. |
| 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available. |

RID

| | |
|----------------------------|-----------------|
| 14.1. UN-Number | Not regulated. |
| 14.2. Proper Shipping Name | Not regulated. |
| 14.3. Hazard Class | Not regulated. |
| 14.4. Packing Group | Not regulated. |
| Description | Not applicable. |
| 14.5. Environmental hazard | None. |
| 14.6. Special Provisions | None. |

ADR

| | |
|----------------------------|-----------------|
| 14.1. UN-Number | Not regulated. |
| 14.2. Proper Shipping Name | Not regulated. |
| 14.3. Hazard Class | Not regulated. |
| 14.4. Packing Group | Not regulated. |
| Description | Not applicable. |
| 14.5. Environmental hazard | None. |
| 14.6. Special Provisions | None. |

ICAO

| | |
|----------------------------|-----------------|
| 14.1. UN-Number | Not regulated. |
| 14.2. Proper shipping name | Not regulated. |
| 14.3. Hazard Class | Not regulated. |
| 14.4. Packing Group | Not regulated. |
| Description | Not applicable. |
| 14.5. Environmental hazard | None. |
| 14.6. Special Provisions | None. |

IATA

| | |
|----------------------------|-----------------|
| 14.1. UN-Number | Not regulated. |
| 14.2. Proper Shipping Name | Not regulated. |
| 14.3. Hazard Class | Not regulated. |
| 14.4. Packing Group | Not regulated. |
| Description | Not applicable. |
| 14.5. Environmental hazard | None. |
| 14.6. Special Provisions | None. |

| |
|---|
| Section 15. Regulatory information |
|---|

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

| | |
|---------------|----------|
| TSCA | Complies |
| EINECS/ELINCS | Complies |
| DSL/NDSL | - |
| PICCS | - |
| ENCS | - |
| IECSC | - |
| AICS | - |
| KECL | - |

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical Safety Assessment

No information available

Section 16. Other information**Full text of R-phrases referred to under Sections 2 and 3**

R43 - May cause sensitization by skin contact

R49 - May cause cancer by inhalation

R36/38 - Irritating to eyes and skin

Full text of H-Statements referred to under sections 2 and 3

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H317 - May cause an allergic skin reaction

H302 - Harmful if swallowed

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Key literature references and sources for datawww.ChemADVISOR.com/**Issuing Date** 24-May-2015**Revision Date** 24-May-2015**Revision Note** Initial Release.

This safety data sheet complies with the requirements of Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No. 1907/2006

General Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet