

## Safety Data Sheet

### 1. Product and Company Identification

Product name:

imageCure, PRH35-ST

Manufacture:

Roland DG Corporation

Address:

1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,  
Shizuoka-ken, 431-2103  
JAPAN

Phone:

+ 81-53-484-1224

Fax:

+ 81-53-484-1226

Importer/Supplier:

Roland DGA Corporation

Address:

15363 Barranca Parkway Irvine, CA 92618-2201  
U.S.A.

Phone:

949-727-2100

Fax:

949 727 2112

Emergency telephone:

949-727-2100

Use of the product:

Stereolithography Resin

Date of issue:

28 December, 2015

### 2. Hazard Identification

2.1 Emergency Overview:

Appearance and odor:

Clear liquid and characteristic odor

This product is classified as dangerous according to GHS.

Sensitization - skin

Category 1

Toxic to reproduction

Category 2

Hazardous to the aquatic

Category 4

environment - long-term hazard

GHS label elements, including precautionary statements

Pictogram



Signal word(s)

Warning

Hazard statement(s)

May cause an allergic skin reaction.  
Suspected of damaging fertility or the unborn child.  
May cause long lasting harmful effects to aquatic life.

## Precautionary statement(s)

## Prevention

Do not handle until all safety precautions have been read and understood.  
 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 Avoid release to the environment.  
 Wear protective gloves/protective clothing/eye protection/face protection.

## Response

IF ON SKIN: Wash with plenty of soap and water.  
 IF exposed or concerned: Get medical advice/attention.

## 2.2. OSHA regulatory status

This product is considered hazardous material by the OSHA Communication Standard (29 CFR 1910.1200)

## 2.3. Other hazards

## Potential Health Effects:

## Eyes:

Contact with eye will be irritating.

## Skin:

Contact with skin may cause irritation, swelling or redness, allergy and/or sensitization.

## Inhalation:

Exposure to vapors (mist) may be harmful to the unborn child and at the risk of impaired fertility and irritate nose, throat/respiratory system.

## Ingestion:

May cause injury of mouth ,throat, and stomach.

## Chronic Health Hazards:

Repeated skin contact may cause a persistent irritation or dermatitis.

## Carcinogenicity:

None of the ingredients in this resin is listed by IARC as a carcinogen. (1,2A and 2B)

See section 11 for more information.

## 2.4. Potential environmental effects

See section 12 for Ecological information.

**3. Composition/Information on Ingredients**

Composition	CAS No.	% By Weight	Classification HCS
Bisphenol A, ethoxylated, dimethacrylate	41637-38-1	80-90	Not classified as hazardous
Ethylene dimethacrylate	97-90-5	<5	STOT SE 3: H335 Skin Sens. 1: H317
Methacrylic ester	C.B.I.	<5	Not classified as hazardous
1,2,2,6,6-pentamethyl-4-piperidyl methacrylate	68548-08-3	<10	Skin Irrit. 2: H315
Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide	75980-60-8	1-5	Repr. 2: H361

\*C.B.I.: Confidential Business Information

## 4. First Aid Measures

### 4.1. First aid procedures

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Call a physician.
- Skin:** In case of contact, immediately flush with plenty of water while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. If swelling or redness occurs, call a physician.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- Ingestion:** If swallowed, DO NOT induce vomiting. Seek immediate medical advice.

### 4.2. Note to physicians

May cause skin and eye irritation.

## 5. Fire Fighting Measures

### 5.1. Flammable properties:

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.  
Flash Point: >93deg.C

### 5.2. Extinguishing media

Suitable extinguishing media:

Use Carbon dioxide, dry chemical, foam.

Unsuitable extinguishing media:

**Water must not be used to extinguish.**

### 5.3. Protection of fire fighters

Special hazards arising from the substance or mixture

Toxic and irritating fume and/or gases may generate by combustion.

Protective equipment and precautions for firefighters

Wear special chemical protective clothing and positive pressure self-contained breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Decontaminate or discard any clothing that may contain chemical residues.

Applying direct water may be dangerous because fire may expand to surroundings.

## 6. Accidental Release Measures

General:

Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. Absorb spill with sand or earth then place in a chemical waste container.

### 6.1. Personal precautions

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus and wear appropriate personal protective equipment.

### 6.2. Environmental precautions

**Wipe off spillage.** Prevent liquid from entering sewers, waterways or low areas.

### 6.3. Methods for containment

Dike spilled product.

### 6.4. Methods for Clean-up

Sweep up material and dispose as waste following local regulations. Scrub contaminated area with detergent and water.

### 6.5. Other information

No information

### 6.6. Spill or leak statements by type of chemical

Eliminate all ignition sources. Use appropriate personal protective equipment (PPE). Absorb and/or contain spill with inert sand, then place in suitable container. For large spills; use water spray to disperse vapors and dilute spill to a nonflammable mixture. Do not flush to sewer. Prevent run-off from entering drains, sewers or waterways.

## 7. Handling And Storage

### 7.1. Handling

Avoid contact with eyes, skin and clothing. Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink.

### 7.2. Storage

Keep containers tightly closed. Do not store the product in high or freezing temperatures. Keep the product out of direct sunlight. Do not store the product with metals, amines, free radical initiators, oxidising agents.

## 8. Exposure Controls/Personal Protection

### 8.1. Exposure Guidelines

Occupational Exposure Limits:

DNEL(Derived No Effect Level)

components	Long term exposure	Short term exposure
Bisphenol A, ethoxylated, dimethacrylate	3.52mg/m <sup>3</sup>	-
Ethylene dimethacrylate	2.45mg/m <sup>3</sup>	-
Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide	3.5mg/m <sup>3</sup>	-

\*Refere to Toxicological Information of REACH registered substance.

(Assessment information of exposure via inhalation route for workers)

### 8.2 Exposure controls:

Control the airborne concentrations below the exposure limits. Use only with adequate ventilation.

### 8.3. Personal protective equipment (PPE)

Eye/face protection:

Employee must wear splash-proof or dust safety goggles and a faceshield to prevent contact with this product.

Skin protection:

Employee must wear appropriate protective impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

Hand protection:

Employee must wear appropriate protective impervious gloves to prevent contact with this substance.

Recommended Chemical-Protective Gloves are polyvinyl alcohol (PVA) Gloves and Laminate gloves. Laminate gloves are made by cutting and then heat-sealing patterns of various hand sizes from laminated sheets of PVA sealed between layers of polyethylene.

Respiratory protection: In case ventilation is insufficient, employee must use NIOSH approved air purifying respiratory protection equipment. Use a half facepiece respirator (with goggles) or full face-piece respirator (without goggles) filtered with organic vapor cartridge. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self contained air supply.  
**WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

General hygiene measures: Wash hands after handling. In case contact with clothing, wash before reuse. Do not eat, drink or smoke in handling or storage area.

## 9. Physical and Chemical Properties

Appearance:	Clear Liquid
Odor:	Characteristic odor
pH:	Not applicable
Boiling point (deg.C)	No data available
Flash point (deg.C)	> 93deg.C
Ignition temperature (deg.C)	No data available
Flammability limits (vol-%)	No data available
Specific Gravity (g/cm <sup>3</sup> , 20deg.C )	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available
Vapor pressure:	No data available
Solubility:	No data available
Solubility in water (g/l, 20deg.C)	Insoluble
Partition coefficient: n-octanol/water:	No data available
Viscosity:	No data available
Melting Point :	No data available
Evaporation Rate	No data available
Vapor Density	No data available
Decomposition Temperature:	No data available
Volatile organic compounds (VOC) content:	No data available

## 10. Stability and Reactivity

- 10.1. Reactivity: High temperatures and UV light may cause rapid polymerization.
- 10.2. Chemical stability: Polymerize under heat and/or light.
- 10.3. Possibility of hazardous reactions: Not expected
- 10.4. Conditions to avoid: Elevated temperatures/heat, UV light, when not in use.
- 10.5. Incompatible materials: Avoid contact with acids, amines, free radical initiators, oxidizing agents.
- 10.6. Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, toxic gases/vapors.

## 11. Toxicological Information

Acute toxicity:

1,2,2,6,6-pentamethyl-4-piperidyl methacrylate (of one component of this product)

LD50 ( Oral-rat ) >4060 mg/kg

LD50 ( Skin ) No data available

LC50 ( Inhalation ) No data available

Serious eye damage/eye irritation: No data available

Skin corrosion/irritation: No data available  
Causes skin irritation.(1,2,2,6,6-pentamethyl-4-piperidyl methacrylate)

Respiratory or skin sensitisation: No data available  
May cause an allergic skin reaction.(Ethylene dimethacrylate)

Germ cell mutagenicity: No data available

Reproductive toxicity: No data available  
Suspected of damaging fertility or the unborn child.(Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide)

Carcinogenicity: None of the ingredients in this product is listed by IARC as a carcinogen. (1,2A and 2B)

STOT-single exposure: No data available  
May cause respiratory irritation. (1,2,2,6,6-pentamethyl-4-piperidyl methacrylate)

STOT-repeated exposure: No data available

Aspiration hazard: No data available

## 12. Ecological Information

Ecotoxicity:

The followings are according to the data on Bisphenol A, ethoxylated, dimethacrylate.

May cause long lasting harmful effects to aquatic life.

Persistence/Degradability: No data available

Bioaccumulation/Accumulation: No data available

Mobility in environment media: No data available

Other adverse effects: No data available

## 13. Disposal Considerations

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations. Do not flush to surface water or sanitary sewer system.

## 14. Transport Information

- 14.1. UN Class/UN Number:  
ADR/ADG/DOT, IMDG, or IATA : Not regulated
- 14.2. UN proper shipping name:  
ADR/ADG/DOT, IMDG, or IATA : Not regulated
- 14.3. Transport hazard class(es):  
ADR/ADG/DOT, IMDG, or IATA : Not regulated
- 14.4. Packing group:  
ADR/ADG/DOT, IMDG, or IATA : Not regulated
- 14.5. Environmental hazards:  
ADR/ADG/DOT, IMDG, or IATA : Not regulated
- 14.6. Special precautions for user: Transport and storage of the product in accordance with general precautions and instructions mentioned in this SDS.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code: Not regulated

## 15. Regulatory Information

### US information:

#### Toxic Substances Control Act (TSCA):

All components of this product are listed on the TSCA Inventory.

### SARA Title III:

Section 313:

Methacrylic ester (Chemical Category N230)

### California; Proposition 65:

WARNING: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity.

### EU information:

Chemical Safety Assessment according to (EC)1907/2006:

This product has not carried out any Chemical Safety Assessment yet.

### Australia Information:

**Hazardous statement:** Classified as hazardous according to NOHSC criteria.

One of the substance in this product is being introduced under a Low Volume Chemical Permit granted under section 21U(2) of the Industrial Chemicals (Notification and Assessment) Act 1989.

## 16. Other Information

NFPA 704: Hazard Rating System

Health - 2 , Flammable - 1 , Reactivity - 1

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

The information in this Safety Data Sheet (SDS) is believed to be 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. It is subject to revision as additional knowledge and experience is gained. Roland DG does not warrant the completeness or accuracy of the information contained herein.