

**Section 1: Identification of the Substance/Mixture and of the Company/Undertaking**

**1.1 Product identifier**

**Product Name** • DTX RPF Clear  
**Product Description** • Clear liquid

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

**Relevant identified use(s)** • Prototyping inkjet fluid

**1.3 Details of the supplier of the safety data sheet**

**Manufacturer** • IKONICS Corporation  
4832 Grand Ave.  
Duluth, MN 55807  
United States  
www.ikonics.com  
sds@ikonics.com  
**Telephone (General)** • (218) 628-2217  
**Telephone (General)** • (800) 328-4261 - Toll free

**1.4 Emergency telephone number**

**Chemtrec** • 1-800-424-9300 - Within USA and Canada  
• +1 703-527-3887 - Outside USA and Canada (collect calls accepted)

**Section 2: Hazards Identification**

**EU/EEC**

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]  
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

**2.1 Classification of the substance or mixture**

**CLP** • Skin Irritation 2 - H315  
Skin Sensitization 1 - H317  
Eye Irritation 2 - H319  
EUH208  
**DSD/DPD** • Irritant (Xi)  
Sensitizer  
R36, R37, R38, R43

**2.2 Label Elements**

CLP

**WARNING**



**Hazard statements** • H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation

## Precautionary statements

- Prevention**
- P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.
  - P264 - Wash thoroughly after handling.
  - P272 - Contaminated work clothing should not be allowed out of the workplace.
  - P280 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response**
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
  - P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
  - P362 - Take off contaminated clothing and wash before reuse.
  - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P337+P313 - If eye irritation persists: Get medical advice/attention.
  - P321 - Specific treatment, see supplemental first aid information.

- Storage/Disposal**
- P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## DSD/DPD



- Risk phrases**
- R36 - Irritating to eyes.
  - R37 - Irritating to respiratory system.
  - R38 - Irritating to skin.
  - R43 - May cause sensitization by skin contact.

- Safety phrases**
- S24 - Avoid contact with skin.
  - S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - S37 - Wear suitable gloves.
  - S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## 2.3 Other Hazards

- CLP**
- No data available
- DSD/DPD**
- No data available

---

## UN GHS

According to Third Revised Edition

### 2.1 Classification of the substance or mixture

- UN GHS**
- Skin Irritation 2 - H315
  - Skin Sensitization 1 - H317
  - Eye Irritation 2 - H319

### 2.2 Label elements

**UN GHS**

#### WARNING



- Hazard statements**
- H315 - Causes skin irritation
  - H317 - May cause an allergic skin reaction
  - H319 - Causes serious eye irritation

## Precautionary statements

- Prevention**
- P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.
  - P264 - Wash thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response**
- P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
  - P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
  - P362 - Take off contaminated clothing and wash before reuse.
  - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P337+P313 - If eye irritation persists: Get medical advice/attention.
  - P321 - Specific treatment, see supplemental first aid information.

- Storage/Disposal**
- P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## 2.3 Other hazards

**UN GHS** • No data available

---

## United States (US)

According to OSHA 29 CFR 1910.1200 HCS

### 2.1 Classification of the substance or mixture

- OSHA HCS 2012**
- Skin Irritation 2 - H315
  - Skin Sensitization 1 - H317
  - Eye Irritation 2 - H319

### 2.2 Label elements

**OSHA HCS 2012**

#### WARNING



- Hazard statements**
- Causes skin irritation - H315
  - May cause an allergic skin reaction - H317
  - Causes serious eye irritation - H319

#### Precautionary statements

- Prevention**
- Avoid breathing dust, fume, gas, mist, vapors and/or spray. - P261
  - Wash thoroughly after handling. - P264
  - Contaminated work clothing should not be allowed out of the workplace. - P272
  - Wear protective gloves/protective clothing/eye protection/face protection. - P280
- Response**
- IF ON SKIN: Wash with plenty of soap and water. - P302+P352
  - If skin irritation or rash occurs: Get medical advice/attention. - P333+P313
  - Take off contaminated clothing and wash before reuse. - P362
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338
  - If eye irritation persists: Get medical advice/attention. - P337+P313
  - Specific treatment, see supplemental first aid information. - P321

- Storage/Disposal**
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

## 2.3 Other hazards

**OSHA HCS 2012** • No data available

---

## Canada According to WHMIS

### 2.1 Classification of the substance or mixture

WHMIS • Other Toxic Effects - D2B

### 2.2 Label elements

WHMIS



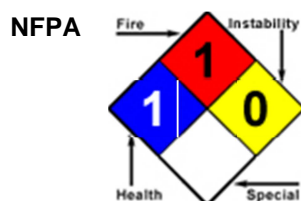
• Other Toxic Effects - D2B

### 2.3 Other hazards

WHMIS

• No data available

### 2.4 Other information



#### Key to abbreviations

= See Section 16 for full text of R and S phrases.

See Section 12 for Ecological Information.

## Section 3 - Composition/Information on Ingredients

### 3.1 Substances

### 3.2 Mixtures

| Composition  |   |               |           |   |          |
|--|---|---------------|-----------|---|----------|
| Chemical Name  | Identifiers   | %             | LD50/LC50 | Classifications According to Regulation/Directive   | Comments |
| aromatic acrylate                                    | NDA   | 80% TO<br>90% |           | WHMIS:<br>UN GHS:<br>EU DSD/DPD:<br>EU CLP:<br>OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2; Skin Sens. 1 | NDA      |
| Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) | CAS:162881-26-7<br>EC Number:423-340-5<br>EU Index:015-189-00-5 | 1% TO<br>3%   |           | WHMIS:<br>UN GHS: Aquatic Chronic 3; Skin Sens. 1<br>EU DSD/DPD: R43; R53<br>EU CLP:<br>OSHA HCS 2012:  | NDA      |

#### Key to abbreviations

= See Section 16 for full text of R and S phrases. See Section 11 for Toxicological Information.

## Section 4 - First Aid Measures

### 4.1 Description of first aid measures

#### Inhalation

- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration and call 911 or emergency medical service.

- Skin**
  - IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
- Eye**
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Ingestion**
  - If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Rinse mouth. Never give anything by mouth to an unconscious person. If large quantities are swallowed, call a physician immediately.

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

- Refer to Section 11 - Toxicological Information.

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

### Section 5 - Firefighting Measures

#### 5.1 Extinguishing media

- Suitable Extinguishing Media**
- SMALL FIRES: Dry chemical, CO<sub>2</sub>, water spray or regular foam.
  - LARGE FIRE: Water spray, fog or regular foam.

- Unsuitable Extinguishing Media**
- No data available

- Firefighting Procedures**
- LARGE FIRES: Use extinguishing agent suitable for type of surrounding fire. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep unauthorized personnel away. Ventilate closed spaces before entering.

#### 5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Material may burn, but does not ignite readily.

- Hazardous Combustion Products**
- Products of combustion include: carbon oxides (CO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>).

#### 5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Wear positive pressure self-contained breathing apparatus (SCBA).

### Section 6 - Accidental Release Measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.
- Emergency Procedures**
- No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

#### 6.2 Environmental precautions

- LARGE SPILLS: Prevent entry into waterways, sewers, basements or confined areas.

#### 6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- Use appropriate Personal Protective Equipment (PPE) Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container.

#### 6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## Section 7 - Handling and Storage

### 7.1 Precautions for safe handling

**Handling** • Use good safety and industrial hygiene practices.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage** • Keep container closed when not in use. Store away from extreme heat. Do not freeze. Store material in its original packaging to prevent UV exposure.

### 7.3 Specific end use(s)

• Refer to Section 1.2 - Relevant identified uses.

## Section 8 - Exposure Controls/Personal Protection

### 8.1 Control parameters

### 8.2 Exposure controls

**Engineering Measures/Controls** • Local exhaust is recommended but not required. Provide adequate ventilation as necessary.

**Personal Protective Equipment**

**Pictograms**



**Respiratory** • Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face** • Wear protective eyewear (goggles, face shield, or safety glasses).

**Hands** • Wear protective gloves - rubber or neoprene.

**Skin/Body** • Wear protective clothing - apron or other impervious body coverings.

**General Industrial Hygiene Considerations** • Handle in accordance with good industrial hygiene and safety practice.

**Environmental Exposure Controls** • No data available

## Section 9 - Physical and Chemical Properties

### 9.1 Information on Physical and Chemical Properties

| Material Description              |                                    |                      |                   |
|-----------------------------------|------------------------------------|----------------------|-------------------|
| Physical Form                     | Liquid                             | Color                | Colorless         |
| Odor                              | Mild                               | Odor Threshold       | No data available |
| Physical and Chemical Properties  | UV reactive.                       |                      |                   |
| General Properties                |                                    |                      |                   |
| Boiling Point                     | No data available                  | Melting Point        | No data available |
| Decomposition Temperature         | No data available                  | pH                   | No data available |
| Specific Gravity/Relative Density | 1.012 Water=1                      | Water Solubility     | Insoluble         |
| Viscosity                         | 80-85 Centipoise (cPs, cP) or mPas | Explosive Properties | Not relevant      |
| Oxidizing Properties:             | Not relevant                       |                      |                   |
| Volatility                        |                                    |                      |                   |
| Vapor Pressure                    | Not relevant                       | Vapor Density        | Not relevant      |
| Evaporation Rate                  | No data available                  |                      |                   |
| Flammability                      |                                    |                      |                   |
| Flash Point                       | No data available                  | UEL                  | Not relevant      |

|                                       |                   |                                     |                   |
|---------------------------------------|-------------------|-------------------------------------|-------------------|
| LEL                                   | Not relevant      | Autoignition                        | Not relevant      |
| Flammability (solid, gas)             | Not relevant      |                                     |                   |
| <b>Environmental</b>                  |                   |                                     |                   |
| Half-Life                             | No data available | Octanol/Water Partition coefficient | No data available |
| Coefficient of water/oil distribution | No data available | Bioaccumulation Factor              | No data available |
| Bioconcentration Factor               | No data available | Biochemical Oxygen Demand BOD/BOD5  | No data available |
| Chemical Oxygen Demand                | No data available | Persistence                         | No data available |
| Degradation                           | No data available |                                     |                   |

## 9.2 Other Information

- Polymerizes to solid/semisolid form upon exposure to UV radiation.

## Section 10: Stability and Reactivity

### 10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

- UV reactive.

### 10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

- Avoid freezing. Excess heat. Strong light.

### 10.5 Incompatible materials

- No data available

### 10.6 Hazardous decomposition products

- No decomposition is expected under normal storage and use conditions. Hazardous decomposition products formed under fire conditions - carbon oxides (COx), nitrogen oxides (NOx).

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

| GHS Properties            | Classification  |
|---------------------------|---|
| Acute toxicity            | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Aspiration Hazard         | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Carcinogenicity           | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Germ Cell Mutagenicity    | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Skin corrosion/Irritation | EU/CLP•Skin Irritation 2<br>OSHA HCS 2012•Skin Irritation 2<br>UN GHS•Skin Irritation 2 |
| Skin sensitization        | EU/CLP•Skin Sensitizer 1<br>OSHA HCS 2012•Skin Sensitizer 1<br>UN GHS•Skin Sensitizer 1 |

|                               |   |
|-------------------------------|---|
| STOT-RE                       | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| STOT-SE                       | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Toxicity for Reproduction     | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Respiratory sensitization     | EU/CLP•<br>OSHA HCS 2012•<br>UN GHS•  |
| Serious eye damage/Irritation | EU/CLP•Eye Irritation 2<br>OSHA HCS 2012•Eye Irritation 2<br>UN GHS•Eye Irritation 2A |

**Route(s) of entry/exposure** • Skin, Eye

**Potential Health Effects**

**Inhalation**

**Acute (Immediate)**

- May cause irritation.

**Chronic (Delayed)**

- Repeated and prolonged exposure may cause irritation.

**Skin**

**Acute (Immediate)**

- Causes skin irritation. May cause an allergic skin reaction.

**Chronic (Delayed)**

- Repeated and prolonged exposure may cause sensitization.

**Eye**

**Acute (Immediate)**

- Causes serious eye irritation.

**Chronic (Delayed)**

- Repeated and prolonged exposure may be harmful.

**Ingestion**

**Acute (Immediate)**

- May cause irritation.

**Chronic (Delayed)**

- No specific information available.

---

**Section 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**

- No data available

**12.6 Other adverse effects**

---



## Section 13 - Disposal Considerations

### 13.1 Waste treatment methods

**Product waste**

- Dispose of content in accordance with local, regional, national, and/or international regulations.

**Packaging waste**

- Dispose of container in accordance with local, regional, national, and/or international regulations.

### 13.2 Other Information

- Dispose of wastes in an approved waste disposal facility.

## Section 14 - Transport Information

|           | 14.1 UN number | 14.2 UN proper shipping name | 14.3 Transport hazard class(es) | 14.4 Packing group | 14.5 Environmental hazards |
|-----------|----------------|------------------------------|---------------------------------|--------------------|----------------------------|
| DOT       | NDA            | NDA                          | NDA                             | NDA                | NDA                        |
| IMO/IMDG  | NDA            | NDA                          | NDA                             | NDA                | NDA                        |
| IATA/ICAO | NDA            | NDA                          | NDA                             | NDA                | NDA                        |

**14.6 Special precautions for user**

- None specified.

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

- Not relevant.

**14.8 Other information**

- DOT • Not regulated.  
 IMO/IMDG • Not regulated.  
 IATA/ICAO • Not regulated.

## Section 15 - Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • Acute

| State Right To Know                                  |             |                   |            |             |             |                   |
|--|-------------|-------------------|------------|-------------|-------------|-------------------|
| Component  | CAS         | MA                | NJ         |             | PA          |                   |
| Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) | 162881-26-7 | No                | No         |             | No          |                   |
| Inventory  |             |                   |            |             |             |                   |
| Component  | CAS         | Australia AICS    | Canada DSL | Canada NDSL | China       | EU EINECS         |
| Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) | 162881-26-7 | Yes               | Yes        | No          | Yes         | No                |
| Inventory (Con't.)                                   |             |                   |            |             |             |                   |
| Component  | CAS         | EU ELNICS         | Japan ENCS | Korea KECL  | New Zealand | Philippines PICCS |
| Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) | 162881-26-7 | Yes               | Yes        | Yes         | Yes         | Yes               |
| Inventory (Con't.)                                   |             |                   |            |             |             |                   |
| Component  | CAS         | Switzerland SWISS |            | TSCA        |             |                   |
| Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) | 162881-26-7 | Yes               |            | Yes         |             |                   |

## Australia

### Labor

#### Australia - List of Designated Hazardous Substances - Classification

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7 R43, R53

## Europe

### Other

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7 R43 R53

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7 Xi R:43-53 S:(2)-22-24-37-61

#### EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7 S:(2)-22-24-37-61

## Germany

### Environment

#### Germany - Water Classification (VwVwS) - Annex 3

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7 ID Number 2126, hazard class 1 - low hazard to waters

## Korea

### Labor

#### Korea - ISHA - Name, Toxicity and Protective Measures of New Chemical Substances

•Phosphine oxide, phenylbis (2,4,6-trimethyl benzoyl) 162881-26-7

## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## 15.3 Other Information

- California Proposition 65: This product contains or may contain a substance(s) known to the State of California to cause cancer and/or reproductive toxicity:  
Toluene CAS #108-88-3 <0.04%

## Section 16 - Other Information

### Relevant Phrases (code & full text)

- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H319 - Causes serious eye irritation
- EUH208 – Contains sensitizing substance(s). May produce an allergic reaction.
- P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.
- P264 - Wash thoroughly after handling.
- P272 - Contaminated work clothing should not be allowed out of the workplace.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- 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.
- P321 - Specific treatment, see supplemental first aid information.
- 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.
- P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- R22 - Harmful if swallowed.
- R36 - Irritating to eyes.
- R37 - Irritating to respiratory system.
- R38 - Irritating to skin.
- R43 - May cause sensitization by skin contact.
- R53 - May cause long-term adverse effects in the aquatic environment.
- S24 - Avoid contact with skin.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Classification method for mixtures**

- Calculation method.

**Last Revision Date**

- N/A

**Preparation Date**

- 23 October 2014

**Other Information**

- Approved by: Troy Bergstedt, Director of Chemical Research, (218) 628-2217 ext.142.

**Disclaimer/Statement of Liability**

- The information contained herein is based on data available to us and is believed to be correct. Since this information may have been obtained in part from independent laboratories or other sources not under direct supervision, no representation is made that the information is accurate, reliable, complete, or representative and Buyer may rely thereon only at the Buyer's risk. We make no guarantee that the health and safety precautions we have suggested will be adequate for all individuals and / or situations involving its handling and uses. No warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet.
-