

# Material Safety Data Sheet

Product Code: **Thermochromic Water Based Screen Ink**

## 1. Product and Company Information

### 1.1 Product Identifiers:

Product Name: Thermochromic Water Based Screen Ink

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

Manufacture of temperature-indicating products and temperature-sensitive decorative effects.

### 1.3 Details of the supplier of the safety data sheet:

QCR Solutions Corp  
P.O. Box 7850  
Port Saint Lucie FL, 34985  
Tel: 772-237-5354  
Fax: 772-672-3544

### 1.4 Emergency Phone Number: 772-237-5354

## 2. Hazardous Identification

### 2.1 Classification of the substance or mixture GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin Sens. 1: H317 - May cause allergic skin reaction.  
Eye Dam. 1 : H318 - Causes serious eye damage.

### 2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal word Danger

Skin Sens. 1: H317 - May cause an allergic skin reaction.

Eye Irrit 2: H318 - Causes serious eye irritation.

Carcinogen 1B: H350 – May cause cancer.

Reproductive toxicity 2: H361 – Suspected of damaging fertility or the unborn child.

### [Prevention]

P201 Obtain special instructions before use

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

P261 Avoid breathing dust/fumes/gas/mist/vapours/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.

P281 Use personal protective equipment as required.

### [Response]

P302+P352 IF ON SKIN: Wash with plenty of 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.

P321 Specific treatment (see ... on this label)

P331 Do NOT induce vomiting.

P333+P313 If skin irritation or a 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

## 3. Composition / Information on Ingredients

### 3.1 Substances

Hazardous Ingredients	Classification	Conc.	CAS
<b>Formaldehyde</b>	Flam. Liq 4; Acute Tox 3; Skin Corr. 1B; Eye Dam, 1; Skin Sens. 1; Muta. 2; Carc 1B; Aquatic Acute 3; H227, H301+H311, H314, H317, H318, H341, H350, H402	<0.5%	50-0-0
<b>4,4'-Isopropylidenedi phenol</b>	Repr. 2: H361f; STOT SE 3: H335; Eye Dam. 1: H318; Skin Sens. 1: H317;	1-5%	80-05-7

# Material Safety Data Sheet

Product Code: **Thermochromic Water Based Screen Ink**

## 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.

**For inhalation:**

Move the exposed person to fresh air. Seek medical attention.

**For skin contact:** Remove contaminated clothing and shoes. Wash thoroughly with mild soap and warm water. Consult a physician if there is persisting irritation. Wash clothing before reuse.

**For eye contact:** Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Seek medical attention if irritation or symptoms persist.

**For swallowing:** Seek medical attention if irritation or symptoms persist. DO NOT INDUCE VOMITING.

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

**Skin contact:** Irritating to the skin.

**Eye contact:** Irritating to the eyes.

**Inhalation:** Irritating to respiratory system. Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system.

**Ingestion:** Ingestion may cause nausea and vomiting. Seek medical attention if irritation or symptoms persist. DO NOT INDUCE VOMITING.

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

**Skin contact:** Itching. Wash off immediately with plenty of soap and water.

**Eye contact:** May cause irritation to the eyes. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Seek medical attention if irritation or symptoms persist.

**Inhalation:** Coughing, difficulty in breathing. If breathing is difficult give oxygen.

**Ingestion:** Ingestion may cause nausea and vomiting. If you feel unwell, seek medical advice (show the label where possible).

## 5. Fire Fighting Measures

### 5.1. Extinguishing media

**Suitable extinguishing media**

Use as appropriate: carbon dioxide (CO<sub>2</sub>), dry chemical, foam.

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

Burning produces irritating, toxic and obnoxious fumes.

### 5.3 Special protective equipment and precautions for fire-fighters

Wear suitable respiratory equipment when necessary.

## 6. Accidental Release Measures

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### 6.2 Methods and materials for containment and cleaning up

Absorb with inert, absorbent material. Sweep up. Transfer to suitable, labelled containers for disposal. Clean spillage area thoroughly with plenty of water.

**Waste disposal:** This material must be disposed within accordance with federal, state, and local ordinances.

### 6.3 Environmental precautions

Do not allow to enter drains, sewers or watercourses.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

Avoid contact with eyes and skin. Ensure adequate ventilation of the working area. Adopt best Manual Handling considerations when handling, carrying and dispensing

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

Keep in a cool, dry, well ventilated area. Keep containers tightly closed. Store in correctly labelled containers.

### 7.3 Specific end use(s)

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

# Material Safety Data Sheet

Product Code: **Thermochromic Water Based Screen Ink**

## 7.4 Suitable Packaging:

Plastic Containers

## 8. Exposure Control & Personal Protection

### Exposure Limits

#### 1.) Formaldehyde

ACGIH TLV TWA: -

Notations: SEN; A2

OSHA PEL 8hr TWA Mg M3: -

ACGIH TLV STEL: C 0.3ppm

OSHA PEL 8hr TWA ppm: -

Skin Designator: -

#### 2.) 4,4'-Isopropylidenediphenol

WEL 8-hr limit ppm: -

WEL 15 min limit ppm: -

WEL 8-hr limit mg/m3 total

inhalable dust:-

WEL 8-hr limit mg/m3 total

respirable dust:-

WEL 8-hr limit mg/m3: 10

WEL 15 min limit mg/m3: -

WEL 15 min limit mg/m3 total

inhalable dust:-

WEL 15 min limit mg/m3 total

respirable dust:-

### 8.1 Control parameters

Components with workplace control parameters.

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

Appropriate engineering controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. If these are not sufficient to maintain concentrations of vapors below the relevant exposure limits, suitable respiratory protective equipment should be worn.

#### Personal protective equipment

##### Individual protection measures

Wear chemical protective clothing.

##### Eye/face protection

Approved safety goggles

##### Skin protection – Hand protection

Chemical resistant gloves (PVC).

## Respiratory protection

Wear suitable respiratory equipment.

## Environmental Exposure Controls

Appropriate local exhaust ventilation is required.

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

FORM:	Liquid
COLOR:	Various
ODOR:	Characteristic
ODOR THRESHOLD:	no data available
pH:	5 - 5.5
MELTING POINT:	no data available
Decomposition temp:	no data available
BOILING RANGE:	no data available
FLASH POINT:	no data available
EVAPORATION RATE:	no data available
IGNITION TEMPERATURE:	no data available
FLAMMABILITY:	no data available
UPPER EXPLOSION LIMIT:	no data available
LOWER EXPLOSION LIMIT:	no data available
VAPOR PRESSURE:	no data available
VAPOR DENSITY:	no data available
RELATIVE DENSITY:	no data available
WATER SOLUBILITY:	Insoluble
VISCOSITY:	300-1500 cps
Specific Gravity:	no data available
Partition coefficient:	no data available

### 9.2 Other safety information

no data available

## 10. Reactivity / Stability

### 10.1 Reactivity

Avoid sparks, flames, heat and sources of ignition.

### 10.2 Chemical stability

Stable under recommended storage conditions

### 10.3 Possibility of hazardous reactions

Burning can product the following combustion products: N/M

### 10.4 Conditions to avoid

Protect from frost

# Material Safety Data Sheet

Product Code: **Thermochromic Water Based Screen Ink**

## 10.5 Incompatible materials

Avoid contact with: Alkalis.

## 10.6 Hazardous decomposition products

Formaldehyde may be generated and other harmful fumes.

## 11. Toxicology Measures

### 11.1 Information on toxicological effects

Toxicological Information

Formaldehyde

Oral Mouse LD50:	42mg/kg
Skin Rabbit LD50:	270 mg/kg
Inhalation Rat LD50:	250ppm

4,4'-Isopropylidenediphenol

Oral Rat LD50:	4240 mg/kg
Oral Mouse LD50:	2500 mg/kg
Dermal Rabbit LD50:	3 mL/kg

**Skin corrosion/irritation** No test data available  
**Serious eye damage/irritation** No test data available  
**Respiratory or skin sensitization** No test data available  
**Germ cell mutagenicity** No test data available  
**Carcinogenicity** No test data available  
**Reproductive toxicity** No test data available  
**STOT-single exposure** No test data available  
**STOT-repeat exposure** No test data available  
**Aspiration hazard** No test data available  
Likely routes to exposure

## 12. Ecological Information

### 12.1 Toxicity

Formaldehyde

Daphnia 1 EC50 – 54mg/l

4,4'-Isopropylidenediphenol

Green algae EC50/96h: 3.1  
Fathead minnows LC50/96h: 4.6  
Daphnia LC50/48h: 10.2

### 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 Other effects

No data available.

## 13. Disposal Considerations

### 13.1 Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance. Do not empty into drains, sewers or water-courses.

## 14. Transport Information

### 14.1 DOT (US)

Not dangerous goods

### 14.2 IMDG

Not dangerous goods

### 14.3 IATA

Not dangerous goods

## 15. Regulatory Information

**Ingredient** : Formaldehyde

TSCA: Yes

MA: Yes

SARA313: Y0.1

CALPROP65: Yes

CWA307: No

CAA112: No

CWA311: Yes

SARA302: Y 500

SARA304: Y 100

**Ingredient** : 4,4'-Isopropylidenediphenol

TSCA: Yes

MA: Yes

SARA313: Y1.0

CALPROP65: No

CWA307: No

CAA112: No

CWA311: No

SARA302: No

SARA304: No

# Material Safety Data Sheet

Product Code: **Thermochromic Water Based Screen Ink**

## 16. Other Information

**Revision:** Revision 2 7/7/2015: Major revision to include the requirements of the HCS/HazCom 2012 Final Rule.

HMIS® Classification: (scale 0 – 4)

<b>HEALTH</b>	1
<b>FLAMMABILITY</b>	0
<b>REACTIVITY</b>	0

PERSONAL PROTECTION

QCR Solutions Corp makes no warranty, expressed or implied, as to the accuracy or reliability of information contained herein, except that such information is, to the best of our knowledge and belief, accurate as of the date indicated on this document. QCR Solutions Corp is not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of this product.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health risks or hazards and should be used with caution. QCR Solutions Corp urges the customer receiving this SDS to study it carefully to become aware of the hazards, if any. In the interest of safety, you should notify your employees, agents, contractors, etc. of the information on this sheet and make it available to anyone using this product and request your customers to inform their employees, customers and agents as well.

The information contained in this SDS is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of this product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Revision Date: July 16, 2015