

# Material Safety Data Sheet

Product Code: **Thermochromic Solvent Screen Ink**

## 1. Product and Company Information

### 1.1 Product Identifiers:

Product Name: Thermochromic Solvent 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

Carcinogen 1B: H350 – May cause cancer.  
Reproductive toxicity 2: H361 – Suspected of damaging fertility or the unborn child.  
Acute Toxicity Oral 4: H302 - Harmful if swallowed  
Acute Toxicity Dermal 4: H312 - Harmful in contact with skin.  
Acute Toxicity Inhalation (Vapours & Dust Mites) 4: H332 - Harmful if inhaled  
Skin Corrosion/Irritation 2: H315 - Causes skin irritation

### [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.  
P270 Do not eat, drink or smoke when using this product  
P271 Use only outdoors or in well ventilated area  
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]

P301+P312 IF SWALLOWED: call a poison center  
P302+P352 IF ON SKIN: Wash with plenty of water  
P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing as modified by IV ATP  
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.  
P312 Call a Poison center/doctor/.../ if you feel unwell  
P321 Specific treatment (see ... on this label)  
P322 Specific measures (see...on this label)  
P330 Rinse Mouth  
P332+P313 If skin irritation occurs: get medical attention  
P333+P313 If skin irritation or a rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P362 Take off contaminated clothing.  
P363 Wash contaminated clothing before reuse.

### [Storage]

P405 Store locked up.

### [Disposal]

P501 Dispose of contents / container to an

## 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 Irrit. 2: H319 - Causes serious eye irritation.  
Carcinogen 1B: H350 - May cause cancer.  
Reproductive toxicity 2: H361 - Suspected of damaging fertility of the unborn child.  
Acute Toxicity Oral 4: H302 - Harmful if swallowed  
Acute Toxicity Dermal 4: H312 - Harmful in contact with skin.  
Acute Toxicity Inhalation (Vapours & Dust Mites) 4: H332 - Harmful if inhaled  
Skin Corrosion/Irritation 2: H315 - Causes skin irritation

### 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: H319 - Causes serious eye irritation.

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approved waste disposal plant

## 3. Composition / Information on Ingredients

### 3.1 Substances

Hazardous Ingredients	Classification	Conc.	CAS
<b>2-Butoxyethanol</b>	Flammable liquids (category 4), H227 - Acute toxicity, oral (category 4), H302 - acute toxicity, inhalation (category 4), H332 - acute toxicity, dermal (category 4), H312 - skin irritation (category 2), H315 - eye irritation (category 2A), H319	30-80%	111-76-2
<b>Citric Acid</b>	Eye Irritation (category 2A), H319	1-5%	77-92-9
<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

## 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

None. Under normal use conditions.

### 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.



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**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.

### 7.4 Suitable Packaging:

Plastic and metal 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:-

1.) 2-Butoxyethanol

ACGIH TLV TWA: - 20ppm

NIOSH TWA 5ppm 24mg/m3

ACGIH Biological Indices - Butoxyacetic acid 200mg/g

### 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:	Viscous Liquid
COLOR:	Various
ODOR:	Aromatic
ODOR THRESHOLD:	no data available
pH:	no data available
MELTING POINT:	no data available
Decomposition temp:	no data available
BOILING RANGE:	>140C
FLASH POINT:	62C
EVAPORATION RATE:	no data available
IGNITION TEMPERATURE:	no data available
FLAMMABILITY:	no data available
UPPER EXPLOSION LIMIT:	no data available

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LOWER EXPLOSION LIMIT: no data available  
 VAPOR PRESSURE: no data available  
 VAPOR DENSITY: no data available  
 RELATIVE DENSITY: no data available  
 WATER SOLUBILITY: no data available  
 VISCOSITY: no data available  
 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

### 10.5 Incompatible materials

Avoid contact with: Strong acids. Strong base. Strong Oxidizing agents. Reducing agent.

### 10.6 Hazardous decomposition products

Formaldehyde may be generated and other harmful fumes.

## 11. Toxicology Measures

### 11.1 Information on toxicological effects

Toxilogical Information

Alkylsulfonic Acid Ester of Phenol

Oral Rat LD50: >5000mg/kg  
 Skin Rat LD50 >1,000mg/kg

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

Citric Acid

Oral Rat LD50: 5,400 mg/kg

2-Butoxyethanol

Oral Rat LD50: 470 mg/kg

LD50 Intratpertureal Rat 220 mg/kg

LC50 Inhalation Rat 4hr 450ppm

Eyes Rabbit moderate eye irritation 24hr

**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 : Skin

## 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

2-Butoxyethanol

96h LC50 Lepomis macrochirus: 1490 mg/L

[static] 96h LC50 Lepomis macrochirus 2950 mg/L

24h EC50 Daphnia magna: 1698-1940 mg/L

48h EC50 Daphnia magna: >1000 mg/L

Citric Acid

96h LC50 Lepomis macrochirus: 1516 mg/L

[static] 72h EC50 Daphnia Magna: 120 mg/L

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

No data available.

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## 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

**Ingredient** : 2-Butoxyethanol

TSCA: Yes

MA: Yes

SARA313: Y

CALPROP65: No

CWA307: No

CAA112: No

CWA311: N

SARA302: N

SARA304: N

## 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>	2
<b>FLAMMABILITY</b>	2
<b>REACTIVITY</b>	0

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