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

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 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

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.

Carcinogen 1B: H350 – May cause cancer.
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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.
P204 Avoid breathing dust/fumes/gas/mist/vapours/spray..
P205 Wash thoroughly after handling.
P261 Do not eat, drink or smoke when using this product
P270 Use only outdoors or in well ventilated area
P271 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
Material Safety Data Sheet
Product Code: Thermochromic Solvent Screen Ink

approved waste disposal plant

3. Composition / Information on Ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>Classification</th>
<th>Conc.</th>
<th>CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butoxyethanol</td>
<td>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</td>
<td>30-80%</td>
<td>111-76-2</td>
</tr>
<tr>
<td>Citric Acid</td>
<td>Eye Irritation (category 2A), H319</td>
<td>1-5%</td>
<td>77-92-9</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Flam. Liq 4; Acute Tox 3; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Mut. 2; Carc 1B; Aquatic Acute 3; H227, H301+H311, H314, H317, H318, H341, H350, H402</td>
<td>&lt;0.5%</td>
<td>50-0-0</td>
</tr>
<tr>
<td>4,4’-Isopropylidenediphenol</td>
<td>Repr. 2; H361f; STOT SE 3: H335; Eye Dam. 1; H318; Skin Sens. 1: H317;</td>
<td>1-5%</td>
<td>80-05-7</td>
</tr>
</tbody>
</table>

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 (CO2), 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 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.

7.4 Suitable Packaging:
Plastic and metal Containers

8. Exposure Control & Personal Protection

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORM</td>
<td>Viscous Liquid</td>
</tr>
<tr>
<td>COLOR</td>
<td>Various</td>
</tr>
<tr>
<td>ODOR</td>
<td>Aromatic</td>
</tr>
<tr>
<td>ODOR THRESHOLD</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>no data available</td>
</tr>
<tr>
<td>Decomposition temp</td>
<td>no data available</td>
</tr>
<tr>
<td>BOILING RANGE</td>
<td>&gt;140C</td>
</tr>
<tr>
<td>FLASH POINT</td>
<td>62C</td>
</tr>
<tr>
<td>EVAPORATION RATE</td>
<td>no data available</td>
</tr>
<tr>
<td>IGNITION TEMPERATURE</td>
<td>no data available</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>no data available</td>
</tr>
<tr>
<td>UPPER EXPLOSION LIMIT</td>
<td>no data available</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet
Product Code: Thermochromic Solvent Screen Ink

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 produce the following combustion products: N/M

10.4 Conditions to avoid
Protect from frost

10.5 Incompatible materials

10.6 Hazardous decomposition products
Formaldehyde may be generated and other harmful fumes.

11. Toxicology Measures

11.1 Information on toxicological effects
Toxicological 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 Intraperitoneal 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.
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
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)

<table>
<thead>
<tr>
<th>Health</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
</tbody>
</table>

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Revision Date: October 26, 2015