Material Safety Data Sheet
Product Code: Thermochromic Powder BPA Free

1. Product and Company Information

1.1 Product Identifiers:
Product Name: Thermochromic Powder BPA Free

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Product use: [SU3] Industrial uses: Uses of substances as such or in preparations at industrial sites; [PC18] Ink and toners; [ERC2] Formulation of preparations;
Description: Thermochromic pigment

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
2.1.2 Classification - EC 1272/2008
Skin Irrit. 2: H315 - May cause skin irritation.
Eye Irrit 2: H319 - Causes serious eye irritation.

2.2 Label elements
Pictogram:

Signal word  Warning
Hazard statement
Skin Irrit. 2: H315 - May cause skin irritation.
Eye Irrit 2: H319 - Causes serious eye irritation.

[Prevention]
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face

[Response]
P302+P352 IF ON SKIN: Wash with 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 on this label)

3. Composition / Information on Ingredients

3.2 Mixtures
67/548/EEC / 199/45/EC
Chemical Name: Color Developer
Index No.:
CAS No.:
EC No.:
REACH Registration Number:
Conc. (%w/w): 10-20%
Classification: Xi; R36/37/38
M-factor:

EC 1272/2008
Chemical Name: Color Developer
Index No.:
CAS No.:
EC No.:
REACH Registration Number:
Conc. (%w/w): 10-20%
Classification: Skin Irrit. 2: H315, Eye Irrit. 2: H319; STOT SE 3: H335
M-factor:

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.
Material Safety Data Sheet
Product Code: Thermochromic Powder BPA Free

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.

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: Inhalation of dust may cause shortness of breath.
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 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.

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 incompatibilities
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 Containers

7.5 Further Information:
On processing FF powders for masterbatch heating may result in generation of formaldehyde. Ensure adequate ventilation of all fumes.

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.

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>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>Various</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</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>100°C</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</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>
<tr>
<td>Lower Explosion Limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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
Heating during moulding will generate high levels of formaldehyde vapours which should be vented.

1.4 Conditions to avoid
No Significant Hazard.

1.5 Incompatible materials
Avoid contact with: Strong bases.

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

11. Toxicology Measures

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicological Information</td>
<td>Color Developer</td>
</tr>
<tr>
<td>Oral Rat LD50</td>
<td>3400 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>No test data available</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>No test data available</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>No test data available</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No test data available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No test data available</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>No test data available</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>No test data available</td>
</tr>
<tr>
<td>STOT-repeat exposure</td>
<td>No test data available</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>No test data available</td>
</tr>
</tbody>
</table>

12. Ecological Information

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential

QCR Solutions Corp
Email: info@qcrsolutions.com • Phone 772-237-5354 • Fax: 772-672-3544 • www.qcrsolutions.com
Material Safety Data Sheet
Product Code: Thermochromic Powder BPA Free

No data available.

12.4 Mobility in soil
No data available.

12.5 Other effects
Harmful to aquatic organisms

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 watercourses.

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

Regulations

16. Other Information

Revision:
This document differs from the previous version in the following areas:
1 - Product Use.
3 - Hazard pictograms.
4 - Signal Word.
5 - Precautionary Statement: Prevention.
6 - Precautionary Statement: Response.

9 - 9.1. Information on basic physical and chemical properties (Initial boiling point).
9 - 9.1. Information on basic physical and chemical properties (Flash point).
9 - 9.1. Information on basic physical and chemical properties (Solubility).

12 - 12.1. Toxicity.

Text Hazard Statements from Section 3
R36/37/38 - Irritating to eyes, respiratory system and skin.
Skin Irrit. 2: H315 - Causes skin irritation.
Eye Irrit. 2: H319 - Causes serious eye irritation.
STOT SE 3: H335 - May cause respiratory irritation.

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: October 27, 2015