1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: OPTICAL BRIGHTENING AGENT TF-351

Recommended use of the chemical and restrictions on use: Optical brightening agent.

Supplier: Orica Australia Pty Ltd
ABN: 99 004 117 828
Street Address: 1 Nicholson Street, Melbourne 3000 Australia

Telephone Number: +61 3 9665 7111
Facsimile: +61 3 9665 7937
Emergency Telephone: 1 800 033 111 (ALL HOURS)

2. HAZARDS IDENTIFICATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS SUBSTANCE.

SIGNAL WORD: HAZARDOUS

Hazard Statement(s):
R41 Risk of serious damage to eyes.

Poisons Schedule (SUSMP): None allocated.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Proportion</th>
<th>Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4&quot;'-Bis(2-sulfostyryl)biphenyl, disodium salt</td>
<td>27344-41-8</td>
<td>&gt;=95%</td>
<td>H318 H402</td>
</tr>
<tr>
<td>Non hazardous component(s)</td>
<td>-</td>
<td>to 100%</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:
Remove victim from area of exposure - avoid becoming a casualty. Seek medical advice if effects persist.

Skin Contact:
If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

Eye Contact:
Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.
Safety Data Sheet

**Ingestion:**
Rinse mouth with water. If swallowed, give a glass of water to drink. If vomiting occurs give further water. Seek medical advice.

**Indication of immediate medical attention and special treatment needed:**
Treat symptomatically. Can cause corneal burns.

### 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:**
Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

**Specific hazards arising from the substance or mixture:**
Combustible solid.

**Special protective equipment and precautions for fire-fighters:**
On burning will emit toxic fumes, including those of oxides of carbon and oxides of sulfur. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

### 6. ACCIDENTAL RELEASE MEASURES

**Emergency procedures/Environmental precautions:**
If contamination of sewers or waterways has occurred advise local emergency services.

**Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:**
Wear protective equipment to prevent skin and eye contact and breathing in dust. Sweep up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal.

### 7. HANDLING AND STORAGE

**Precautions for safe handling:**
Avoid skin and eye contact and breathing in dust. Avoid handling which leads to dust formation. May form flammable dust clouds in air. For precautions necessary refer to Safety Data Sheet “Dust Explosion Hazards”. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities:**
Store in a cool, dry, well ventilated place and out of direct sunlight. Keep containers closed when not in use - check regularly for spills.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control Parameters:** No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for particulates:

Dusts not otherwise classified: 8hr TWA = 10 mg/m³
TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Appropriate engineering controls:**
Avoid generating and breathing in dusts. Use with local exhaust ventilation or while wearing dust mask. Keep containers closed when not in use.

**Individual protection measures, such as Personal Protective Equipment (PPE):**
The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

Orica Personal Protection Guide No. 1, 1998: F - OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.

Wear overalls, chemical goggles and impervious gloves. Avoid generating and inhaling dusts. If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Powder or Granules</td>
</tr>
<tr>
<td>Colour:</td>
<td>Yellow Green</td>
</tr>
<tr>
<td>Odour:</td>
<td>Weak</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>0.55-0.67 @20°C</td>
</tr>
<tr>
<td>Relative Vapour Density (air=1):</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour Pressure (20 °C):</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point (°C):</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Flammability Limits (%):</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature (°C):</td>
<td>580</td>
</tr>
<tr>
<td>Solubility in water (g/L):</td>
<td>25 g/L @30°C</td>
</tr>
<tr>
<td>Melting Point/Range (°C):</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Point (°C):</td>
<td>&gt;350</td>
</tr>
<tr>
<td>pH:</td>
<td>7.0-8.5 (1 g/L in water)</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal conditions of use.
Possibility of hazardous reactions: None known.

Conditions to avoid: Avoid dust generation.

Incompatible materials: Incompatible with strong oxidising agents.


11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: No adverse effects expected, however, large amounts may cause nausea and vomiting.

Eye contact: A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Skin contact: Contact with skin may result in irritation.

Inhalation: Breathing in dust may result in respiratory irritation.

Acute toxicity:
Oral LD50 (rat): 2000 mg/kg

Skin corrosion/irritation: Non-irritant (rabbit). Not a skin sensitiser (guinea pig).

Serious eye damage/irritation: Serious damage to eyes (rabbit).

Chronic effects: Non-mutagenic.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Avoid contaminating waterways.

Aquatic toxicity: Harmful to aquatic organisms.
96hr LC50 (Zebra fish): 76 mg/L
24hr EC50 (Daphnia magna) = >1000 mg/L.
3hr IC50 (Bacteria): >100 mg/L
BOD5: 0 mgO2/g, COD: 1507 mgO2/g

Log Octanol/Water Partition Coefficient: 1.96

13. DISPOSAL CONSIDERATIONS

Disposal methods: Refer to Waste Management Authority. Dispose of contents/container in accordance with local/regional/national/international regulations.

14. TRANSPORT INFORMATION
Road and Rail Transport
Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

Marine Transport
Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

Air Transport
Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

Classification:
This material is hazardous according to Safe Work Australia; HAZARDOUS SUBSTANCE.

Hazard Statement(s):
R41 Risk of serious damage to eyes.

Poisons Schedule (SUSMP): None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

This safety data sheet has been prepared by Orica Toxicology & SDS Services.

Reason(s) for Issue:
5 Yearly Revised Primary SDS

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Orica Limited cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Orica representative or Orica Limited at the contact details on page 1.

Orica Limited’s responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.