TECHNICAL NOTE

Material Safety Data Sheet - Stabilant 22™ – Expires 12/31/2014

DESIGNATION

Name: Stabilant 22 (No synonyms)
Use: Electronic Contact Enhancer
Chemical Name & Identity: 100% [No Fire or Health Hazard] - falls under CAS 9003-11-6 (a Modified Polyoxypropylene-Polyoxyethylene Block Polymer of the Polyglycol Family)
Family: Polyglycol

HAZARDOUS INGREDIENTS

Hazardous Ingredients: (EPA & TSCA) - None
(WHMS IS) – None

PHYSICAL DATA

Physical State: Liquid
Appearance: Cloudy to clear liquid
Odor: Faint musty odor
Odor Threshold: No data
Melting Point: Pour point 16° Celsius
Boiling Point: None
Specific Gravity: 1.05
Density: 1.05 gms/ml
Decomposition Temp: >210° Celsius
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water</td>
<td>100 grams per liter</td>
</tr>
<tr>
<td>Viscosity Dynamic</td>
<td>490 mPa.s (25° Celsius)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>&lt; 0.1 mmHg (25° Celsius)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No tests run</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>1,040 kg/m3</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No tests run</td>
</tr>
<tr>
<td>Index of refraction</td>
<td>1.454 at 25° Celsius</td>
</tr>
<tr>
<td>Coefficient of Water/oil distribution</td>
<td>No tests run</td>
</tr>
<tr>
<td>pH</td>
<td>5 to 7.5 @ 10 g/l</td>
</tr>
<tr>
<td>Total Organic Carbon (TOC)</td>
<td>28%</td>
</tr>
</tbody>
</table>

**FIRE & EXPLOSION HAZARDS**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>Will support combustion on decomposition - e.g. material temperature must have been raised above 200° Celsius</td>
</tr>
<tr>
<td>Lower Explosion Limit (% by Volume)</td>
<td>No tests run</td>
</tr>
<tr>
<td>Flash Point</td>
<td>200° Celsius</td>
</tr>
<tr>
<td>Method</td>
<td>COC</td>
</tr>
<tr>
<td>Hazardous Combustion Products</td>
<td>None known</td>
</tr>
<tr>
<td>Extinguishing Media</td>
<td>Water fog, CO₂, Foam, Dry Chemical</td>
</tr>
<tr>
<td>Special Procedures</td>
<td>Self Contained Breathing Apparatus should be used when fighting a fire in a confined area or when exposed to contamination products</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No tests run</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to impact</td>
<td>None known</td>
</tr>
<tr>
<td>Sensitivity to Static Discharge</td>
<td>No tests run</td>
</tr>
<tr>
<td>Unusual Fire &amp; Explosion Hazards</td>
<td>Improperly disposed of Stabilant soaked combustible materials might be subject to spontaneous combustion</td>
</tr>
<tr>
<td>Dangerous Goods Class</td>
<td>None</td>
</tr>
</tbody>
</table>
### HEALTH EFFECTS DATA

**Routes of Entry:** Not to be taken orally, no prolonged skin or eye irritation noted on prolonged exposure

**LD₅₀:** 5 g/kg (Oral)

**Tested on:** Rats

**Skin Overexposure effects:** Prolonged skin or eye contact may cause light temporary irritation

**Skin Irritation:** Limited tests indicate no significant long term irritation

**Eye Irritation:** Limited tests indicate no significant long term irritation

**Inhalation Acute:** Very low vapor pressure suggests that this would not be applicable

**Inhalation Chronic:** Very low vapor pressure suggests that this would not be applicable

**Oral Ingestion:**
- Oral ingestion of **small** amounts will cause diarrhea
- Oral ingestion of **large** amounts could cause systemic collapse

**Effects of Acute Exposure:** Oral - see above; Skin or eye, Limited tests indicate no significant long term irritation

**Effects of Chronic Exposure:** Oral - see above
- Skin or eye - limited tests indicate no significant long term irritation

**Exposure Limits:** No tests run - very low vapor pressure combined with the very low toxicity and the small surface areas of the material when applied to contacts suggests that for practical purposes it would be virtually impossible to reach an airborne concentration that would be injurious. Limited testing on skin exposure indicates no significant long term irritation or sensitization. We suggest a precautionary washing of the exposed areas with soap and water.

**Sensitization to Material:** Limited tests indicate no sensitization effects

**Carcinogenicity:** None known

**Reproductive Effects:** No tests run

**Tetragenicity:** No tests run
Mutagenicity: No tests run
Synergistic Materials: None known

**REACTIVITY DATA**

Stability: Stable
Conditions to avoid: Excessive temperatures
Incompatibility: None known
Hazardous Decomposition Products: None known
Hazardous Polymerization or Reactivity: Will not occur

**ECOLOGICAL DATA**

Biodegradability: No tests run - No data
Fish Toxicity: At concentrations of up to 5 ppm., no toxic reactions were noted
Bacterial Inhibition in Influent: No data

**ENGINEERING CONTROLS**

Bulk handling: Observe physical safety procedures commensurate with the size of the container involved
Dilution: Precautions should be taken to be sure that diluted materials are properly labeled as to the diluent used

**SPECIAL PROTECTION INFORMATION**

Ventilation: General mechanical ventilation is adequate
Respiratory Protection: Use an approved respirator if exposed to mists or aerosols
Protective Gloves: Rubber, Neoprene or Plastic when handling bulk amounts
Eye Protection: Goggles or Face shield when handling bulk amounts
Footwear: Non slip when handling bulk amounts
Clothing: Plastic apron when handling bulk amounts
Other: Not required
OTHER REGULATORY INFORMATION

United States: The materials in this product have been reviewed and are not reportable under SARA title III
- This material is included in the TSCA inventory
- OSHA Classification: Non-hazardous

Customs: The material is classified as Semiconductors, Other
- under Harmonized Tariff Code 8541.50.00.80

Canada: This material is included on the Domestic Substances List under CEPA
- NDSL - Not listed

SPECIAL STORAGE PRECAUTIONS

Handling & Storage Procedures: Avoid eye contact and prolonged skin contact. Store in a cool, dry location.

SPECIAL SHIPPING INFORMATION

Shipping Name: Stabilant 22
- Semiconductor, Other

PIN (Product ID#): None

Packing Group –

Class: Non-toxic

Special Provision: None

Subsidiary Class: None

Schedule XII: Not applicable
(Harmonized Tariff Code) 8541.50.00.80

FIRST AID - EMERGENCY

Fire: No special requirements known

Eyes: Flush immediately with flowing water for a period of at least 10 minutes and consult a physician

Skin: Wash with soap and water. Remove and launder contaminated clothing before re-use. Consult a physician if irritation develops at site of exposure.

Ingestion: Induce vomiting and consult a physician
Inhalation: If the material is sprayed in large quantities, excessive aerosol inhalation will cause irritation, congestion, and act as an expectorant. Consult a physician.

HOUSEKEEPING PROCEDURES

Clean-up of Leaks & Spills: As spilled material is quite slippery it should be covered with absorbent anti-skid material and cleaned up immediately

Disposal of Waste: This product is not a hazardous waste when discarded as defined in 40CFR261.337.
This product is not a halogenated solvent when spent as defined in 40CFR261.317.
This product may be incinerated together with domestic waste so long as local regulations permit incineration.
-Halogen content: 0 ppm (μg/g)
-Sulfur content: 0 ppm (μg/g)

No chelating agent action

OTHER DATA (Excluded from waiver at end of MSDS)

Heavy Metals: D.W. Electrochemicals Ltd. has a policy of not allowing any intentional addition of any heavy metals, such as lead, cadmium, mercury, or hexavalent chromium, or their compounds, to be used in inks or in the labels on our packaging and requires the total concentration of these materials, if present, to be so at a level of less than 100 parts per million and we so certify.

RoHS Legislation Article 4(1) pertaining to Heavy Metals in Stabilants and other prohibited components:

D.W. Electrochemicals Ltd. has a policy of not allowing any addition of any heavy metals, such as lead, cadmium, mercury, or hexavalent chromium, or their compounds, to be used in the Stabilants and requires the total concentration of these materials, if present, to be so at a level of less than 100 parts per million and we so certify.

Nor does Stabilant contain any polybrominated biphenyls (PBB's) or polybrominated diphenyl ethers (PBDE's) and we so certify.
Ozone Depleting Chemicals: Because of our corporate opposition to the use of ODC's either in the manufacture of, or as an inclusion in any of our products, D.W. Electrochemicals Ltd. has consistently refused to provide any of our products in aerosol spray packaging and/or to supply any of our materials diluted with any Class 1 ODC, and we so certify.

PCB's: We certify that this material has been subjected to tests capable of detecting PCB's to a level of less than 2 parts per million and no PCB's have been found.

Packaging: New standards are in place in an attempt to reduce the amount of plastics, tape and/or adhesives used and to ensure that our packaging may be reused or recycled.

MSDS PREPARATION DATA & EMERGENCY PHONE NUMBER

Prepared By: Wm Wright
Department: Engineering
Preparation Date: December 31st, 2011
Current Revision: Revision 30
Emergency Phone: (905) 508-7500
Emergency Contact: Wm Wright


NATO/CAGE Supplier code #38948
15 mL Stabilant 22 has NATO Stock Number 5999-21-909-9981

D.W. Electrochemicals Ltd. urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology or fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe use and handling of this product, each customer or recipient should
(1) notify employees, agents, contractors and others who may use this material, of the information in this MSDS and any other information regarding hazards or safety,
(2) Furnish this same information to each customer for the product, and
(3) request customers to notify their employees, customers, and other users of the product of this information.

The information and recommendations contained herein are based on data believed to be correct, however no guarantee or warranty of any kind, expressed or implied, is made with respect to information and recommendations contained herein except where certified.

RoHS Article 4(1) Compliant

©1997 D. W. Electrochemicals Ltd. This note may be reproduced or copied, provided its content is not altered. The term "contact enhancer" © 1983 Wright Electroacoustics.

Revision 30
MANUFACTURER: D.W. ELECTROCHEMICALS LTD.

ADDRESS.....: 97 NEWKIRK ROAD NORTH - UNIT 3
RICHMOND HILL, ONTARIO
CANADA L4C 3G4

CERTIFICATE OF SHELF LIFE

Re Invoice Number CB618
Date .............. 08-21-2012

I CERTIFY THAT ALL STABILANTS IN THIS SHIPMENT
UNDER PURCHASE ORDER NUMBER 080912
FROM:
POSTHORN RECORDINGS
ATTN: JERRY BRUCK
142 WEST 26TH STREET
NEW YORK NEW YORK
USA 10001

HAVE A SHELF LIFE IN EXCESS OF FIFTEEN YEARS
WITH THE EXCEPTION OF ANY ALCOHOL DILUANT
USED IN EITHER THE STABILANT 22A/22E WHICH
MIGHT EVAPORATE. ANY LOSS MAY BE COMPENSATED
FOR BY THE ADDITION OF THE SAME ALCOHOL
AS NECESSARY TO MAKE UP ANY SUCH LOSS.

Signed at Richmond Hill, Ontario on 08-21-2012

For D.W. Electrochemicals Ltd.

AUTHORIZED NAME ..... : Betty Gordon
AUTHORIZED SIGNATURE : Betty Gordon
TITLE ................. : Sales Mgr.
MANUFACTURER : D.W. ELECTROCHEMICALS LTD.

ADDRESS .... : 97 NEWKIRK ROAD NORTH - UNIT 3
               RICHMOND HILL, ONTARIO
               CANADA   L4C 3G4

CERTIFICATE OF COMPLIANCE

Re Invoice Number C8618
Date .......... 08-21-2012

I CERTIFY THAT ALL MATERIALS IN THIS SHIPMENT
COMPLY WITH PURCHASE ORDER NUMBER 080912
FROM :
    POSTHORN RECORDINGS
    ATTN: JERRY BRUCK
    142 WEST 26TH STREET
    NEW YORK  NEW YORK
    USA  10001

Signed at Richmond Hill, Ontario on 08-21-2012
For D.W. Electrochemicals Ltd.

AUTHORIZED NAME .... : Betty Gordon
AUTHORIZED SIGNATURE : Betty Gordon
TITLE ............... : Sales Mgr