

SAFETY DATA SHEET – Stabilant 22™

Expiration Date: 05/21/2018

Technical Note Number 1



1. Identification

1.1 Product Identification

Product Name/Commercial Name: Stabilant 22 (no synonyms)

1.2 Uses of Product or Mixture

Use: Electronic contact enhancer - a product to enhance electrical connections between two metal contacts under the effect of an electrical field.

1.3 Company Information

Supplier: D.W. Electrochemicals Ltd.

Address: 3-97 Newkirk Road,
Richmond Hill, Ontario
L4C 3G4, Canada

Tel: 905-508-7500

Fax: 905-508-7502

Contact Email: dwel@stabilant.com

1.4 Emergency Contact Numbers

Tel: 905-508-7500

Fax: 905-508-7502

2. Hazard Identification

2.1 Classification of Substance/Mixture

No need for classification according to GHS criteria.

2.2 Hazardous Ingredients:

per EPA / TSCA (U.S.A.) – None

per WHMIS (Canada) – None

2.3 Label Elements / Precautionary Statements

None

2.4 Other Hazards

None

3. Composition / Information on Ingredients

3.1 Substances

Chemical Name & Identity: Stabilant 22 (CAS 9003-11-6) - 100%

(a Modified Polyoxypropylene-Polyoxyethylene Block Polymer, polyglycol family)

4. First Aid Measures

4.1 Description of First Aid Measures

In case of contact with skin: Wash with soap and water. Remove and wash contaminated clothing before re-use. Consult a physician if irritation develops at site of exposure.

In case of contact with eyes: Flush immediately with flowing water for a period of at least 10 minutes and consult a physician.

In case of ingestion: Do not induce vomiting; Drink plenty of water and consult a physician.

In case of inhalation: If material is sprayed in large quantities, excessive aerosol inhalation will cause irritation, congestion and act as an expectorant. Consult a physician.

5. Fire-fighting Measures

5.1 Means of Extinction

Extinguishing Media: Water, Fog, CO₂ (Carbon Dioxide), Foam, Dry Chemical

Unsuitable Extinguishing Media: None

5.2 Specific Hazards arising from the substance

Combustion can produce toxic vapors including carbon monoxide (CO).

5.3 Protective Equipment and Precautions

Self-Contained Breathing Apparatus should be used when fighting a fire in a confined area or when exposed to contamination products.

5.4 Unusual Fire & Explosion Hazards

None

6. Accidental Release Measures

6.1 Precautions, Protective Equipment, Emergency Procedures

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 footwear when handling bulk amounts

Clothing: Plastic apron when handling bulk amounts

Other: Not required

6.2 Environmental Precautions

Prevent large amounts from entering drains, soil or ground water.

6.3 Clean Up of Leaks and Spills

Spilled material is quite slippery; it should be covered with absorbent anti-skid material and cleaned up immediately. Dispose of absorbent in accordance with local regulations.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes, or inhalation of vapour / mist.

Do not eat or drink or smoke during use.

When handling bulk amounts, observe physical safety precautions commensurate with the size of the container involved.

7.2 Conditions for Safe Storage

Store in a cool, dry location.

Keep containers closed after use.

7.3 Dilution

Precautions should be taken to be sure that diluted materials are properly labeled as to the diluent used.

8. Exposure Controls / Personal Protection

8.1 Control Parameters

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.

8.2 Appropriate Engineering Controls

None

8.3 Personal Protection Measures

Protection of the eyes: Safety goggles if handling large amounts

Protection of the skin: Plastic apron if handling large amounts

Protection of the hands: Rubber, Neoprene or Plastic gloves when handling large amounts

Respiratory Protection: Approved respirator or mask if spraying or misting may occur

8.4 Effects of Exposure

Acute Exposure: Oral, Skin or eye, limited tests indicate no significant long term irritation

Chronic Exposure: Oral, skin or eye, limited tests indicate no significant long term irritation

9. Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

- **Appearance and Colour:** Cloudy to clear liquid
- **Odour:** Faint, musty odour
- **Odour Threshold:** No data available
- **pH:** 5 to 7.5 @ 10 grams per litre
- **Melting Point:** Pour point 16° Celsius
- **Boiling Point:** None
- **Flash Point [method]:** 200° Celsius [C.O.C.]
- **Evaporation Rate:** No tests run
- **Flammability:** Will support combustion on decomposition - material temperature must have been raised above 200° Celsius
- **Lower Explosion Limit (% by volume):** No tests run
- **Vapour Pressure:** < 0.1 mmHg (25° Celsius)
- **Vapour Density:** No test run
- **Specific Gravity:** 1.05
- **Density:** 1.05 gms/ml
- **Bulk Density:** 1,040 kg/m³
- **Partition Coefficient (n-octanol/water):** No tests run
- **Auto-ignition Temperature:** No tests run
- **Decomposition Temperature:** > 210° Celsius
- **Dynamic Viscosity:** 490 mPa.s (25° Celsius)
- **Index of Refraction:** 1.454 @ 25° Celsius
- **Total Organic Carbon (TOC):** 28%

10. Stability and Reactivity

- 10.1 Reactivity**
Stable under normal conditions
- 10.2 Chemical Stability**
Stable under normal conditions
- 10.3 Possible Hazardous Reactions**
None known
- 10.4 Conditions to be Avoided**
Avoid fire / excessive temperatures.
- 10.5 Incompatible Materials**
Strong acids, strong bases, strong oxidizers
- 10.6 Hazardous Decomposition Products**
None known

11. Toxicological Information

- 11.1 Toxicological Effects**
- **Acute Toxicity:** Mild; intestinal irritation with diarrhea if ingested.
 - **Skin Irritation:** Limited tests indicate no long-term irritation.
 - **Eye Irritation:** Limited tests indicate no long-term irritation.
 - **Inhalation:** Very low vapor pressure suggests that this would not be applicable.
 - **Sensitization to Material:** Limited tests indicate no sensitization effects
 - **Mutagenicity:** No tests run
 - **Carcinogenicity:** No tests run
 - **Reproductive Effects:** No tests run
 - **Teratogenicity:** No tests run
 - **Routes of Entry:** Oral - Do not ingest.
 - **Symptoms of Exposure:** Ingestion of moderate amounts may cause diarrhea.
 - **Chronic Effects:** Prolonged skin or eye contact may cause light temporary irritation.
- 11.2 Numeric Data on Toxicity:**
- **LD₅₀ - Oral:** > 2,000 mg/kg (Tested on rats)

12. Ecological Information

- 12.1 Ecotoxicity:** At concentrations of up to 5ppm., no toxic reactions were noted
- 12.2 Persistence and Degradability:** No tests run – No Data
- 12.3 Bioaccumulative Potential:** No tests run – No Data
- 12.4 Mobility in Soil:** No tests run – No Data
- 12.5 Other Adverse Effects:** No Data

13. Disposal Considerations

- 13.1 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 40CFR261.317
 - This product may be incinerated together with domestic waste so long as local regulations permit incineration: **Halogen Content:** 0 ppm, **Sulfur Content:** 0 ppm
 - No chelating agent action

14. Transport Information

- 14.1 U.N. Number**
None
- 14.2 U.N. Proper Shipping Name**
Not Applicable
- 14.3 Transport Hazard Class**
Not Applicable
- 14.4 Subsidiary Class**
None
- 14.5 Packing Group**
Not Applicable
- 14.6 Environmental Hazards**
Not Applicable
- 14.7 Special Precautions**
None
- 14.8 Transportation in bulk according to Annex II of MARPOL 73/78 and IBC code**
Not Applicable
- 14.9 Other Information**
Not considered a dangerous good under DOT, IATA, ADR, IMDG or RID
- 14.10 Schedule XII**
Not Applicable
(Harmonized Tariff Code) 8541.50.00.80

15. Regulatory Information

- 15.1 Canada**
The material is on the 'Domestic Substance List' under "CEPA" (Not on NDSL)
- 15.2 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
- 15.3 Customs**
The material is classified as '*Semiconductor, Other*'
Harmonized Tariff Code 8541.50.00.80

16. Other Information

- 16.1 Revision Information**
Revision 32
Preparation Date: May 22, 2015
Revision Changes: Updated to G.H.S. standard from previous revision.
- 16.2 RoHS Legislation Article 4(1) pertaining to Heavy Metals and other prohibited components:**
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 Stabilants or in the inks or 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.
- 16.3 Polybrominated biphenyls / polybrominated biphenyl ethers**
Stabilant contain no PBB's or PBDE's and we so certify.
- 16.4 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.

16.5 PolyChlorinated Biphenyls

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.

16.6 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.

16.7 Key to abbreviations and acronyms:

ADR = Accord Dangereuses Route (accord on dangerous good transport)

CAS = Chemical Abstracts Service

CEPA = Canadian Environmental Protection Act (1999)

CFR = Code of Federal Regulations (re: EPA)

DOT = U.S. Dept. of Transportation

EPA = U.S. Environmental Protection Agency

IATA = International Air Transport Association

IBC = International Bulk Chemical code (re: Maritime shipping)

IMDG = Int'l Maritime Dangerous Goods

LD₅₀ = Lethal Dose (solids & liquids), which kills 50% of test animals

MARPOL = MARine POLLution convention of '73/'78

NDSL = Non-Domestic Substance List (Can.)

OSHA = Occupational Safety and Health Administration (U.S.A.)

RID = Regulation of dangerous goods by rail (2008/68/EC)

SARA = Superfund Amendments and Reauthorization Act (U.S.A., re: EPA)

WHMIS = Workplace Hazardous Materials Information System

Patented Canada 1987, US Patent 4696832. Others Pending.

NATO/CAGE Supplier Code #38948

-15mL 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, or 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, customer 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 32

SAFETY DATA SHEET – Stabilant 22A™

Technical Note Number 4

Expiration Date: 05/21/2018



1. Identification

1.1 Product Identification

Product Name/Commercial Name: Stabilant 22A (no synonyms)

1.2 Uses of Product or Mixture

Use: Electronic contact enhancer - a product to enhance electrical connections between two metal contacts under the effect of an electrical field.

1.3 Company Information

Supplier: D.W. Electrochemicals Ltd.

Address: 3-97 Newkirk Road,
Richmond Hill, Ontario,
L4C 3G4, Canada

Tel: 905-508-7500

Fax: 905-508-7502

Contact Email: dwel@stabilant.com

1.4 Emergency Contact Numbers

Tel: 905-508-7500

Fax: 905-508-7502

2. Hazard Identification

2.1 Classification of Substance/Mixture

Flammable liquid (CAS 67-63-0 : GHS Category 2, WHMIS B2 for isopropanol)

Skin irritation (CAS 67-63-0 : GHS Category 3)

Eye irritation (CAS 67-63-0 : GHS Category 2A, WHMIS D2B)

2.2 Label Elements / Precautionary Statements

Signal Word: Danger

Hazard Statements

§ H225 Highly flammable liquid and vapour

§ H316 Causes mild skin irritation

§ H319 Causes serious eye irritation

§ H336 May cause drowsiness or dizziness

Precautionary Statements

§ P210 Keep away from heat / sparks / open flame - No smoking

§ P261 Avoid breathing vapour / fumes / mist / spray

§ P305 + P351 + P338 IF IN EYES: Rinse carefully with water for several minutes. Remove contact lenses if present and easy to remove. Continue rinsing.

Pictograms - see section 16

2.3 Other hazards which do not result in classification

None

3. Composition / Information on Ingredients

3.1 Substances

- **75% isopropanol** CAS No. 67-63-0
(synonyms: 2-propanol, isopropyl alcohol)
- **25% Stabilant 22** CAS No. 9003-11-6
(a modified polyoxypropylene-polyoxyethylene block polymer of the polyglycol family)

4. First Aid Measures

4.1 Description of First Aid Measures

In case of ingestion:

Do not induce vomiting. If victim is alert and not convulsing, rinse out mouth and give 1/2 to 1 glass of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Transport victim to an emergency facility IMMEDIATELY!

In case of inhalation:

Remove to fresh air. If not breathing give artificial respiration. Obtain medical attention immediately.

In case of contact with eyes:

Flush immediately with flowing water for a period of at least 20 minutes with eyelids open. Remove contact lenses, if present and easily removed and continue rinsing. Obtain medical attention immediately - treat for isopropanol exposure.

In case of contact with skin:

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

4.2 Principal Symptoms and Effects, both Acute and Delayed

Eye / skin irritation; drowsiness/dizziness on inhalation of isopropanol vapour.

4.3 Indication of any immediate medical attention and special treatment needed

Seek medical attention if inhaled, ingested or on eye contact.

5. Fire-fighting Measures

5.1 Means of Extinction

Extinguishing Media: Water, Fog, CO₂ (Carbon Dioxide), Foam, Dry Chemical

Unsuitable Extinguishing Media: Do not use direct water stream as this could spread fire.

5.2 Specific Hazards arising from the substance

Combustion may produce heavy smoke and/or toxic fumes of carbon monoxide. Do not inhale gases produced by combustion or explosion.

5.3 Protective Equipment and Precautions

Self-Contained Breathing Apparatus should be used when fighting a fire in a confined area or when exposed to contaminated products

5.4 Unusual Fire & Explosion Hazards

None

6. Accidental Release Measures

6.1 Precautions, Protective Equipment, Emergency Procedures

Ventilation:

Whenever large volumes of the material are being used (>250 mL) or whenever the continually exposed surface area of the material is in excess of 3 Square ft., it is suggested that local exhaust ventilation be provided.

Where the material is being applied by swab or small brush, or from a dropper bottle, it is highly unlikely that sufficient air concentration of the isopropanol could occur under normal ventilation such that a health hazard could be created.

Respiratory Protection:

Where large volumes of the material (>250 mL) are being used or where large surface areas are being exposed (e.g. - dipping tanks) the use of a NIOSH/MSHA approved air purifying respirator equipped with organic vapor cartridges be used if exposed to concentrations up to 1000 ppm. Use an air supplied unit if exposed to higher or unknown concentrations. (Such as in bulk handling). Where small amounts are being used with a swab or small brush, or are being dispensed from a dropper bottle, respiratory protection is not needed under normal ventilation conditions.

Protective Gloves:

Rubber, Neoprene or Plastic when handling bulk amounts

Eye Protection:

Goggles or Face shield when handling bulk amounts

Clothing:

Plastic apron, non-slip footwear when handling bulk amounts

Other: Not required

6.2 Environmental Precautions

Prevent large amounts from entering drains, soil or ground water

6.3 Clean Up of Leaks and Spills

Eliminate all sources of ignition. Stop or reduce discharge if safe to do so. Prevent material from entering water courses or sewers. Ventilate enclosed spaces. Contain by applying absorbent. Collect waste absorbent for disposal in accordance with local regulations. For significant releases contact regulatory authorities. Residual spilled material is quite slippery; it should be covered with absorbent anti-skid material and cleaned up immediately.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes, or inhalation of vapour / mist

Do not eat or drink or smoke during use. Take measures to avoid open flame, sparks or electrostatic buildup / discharge. When handling bulk amounts, observe physical safety precautions commensurate with the size of the container.

7.2 Conditions for Safe Storage

Store in a cool, dry location with good ventilation.

Keep containers closed after use

8. Exposure Controls / Personal Protection

8.1 Control Parameters

Exposure Limits: No Tests Run – The Stabilant 22 component has very low vapor pressure and very low toxicity. In normal use when applied to electrical contacts, the small quantities used suggest no injurious exposure from this component. Precautions apply to isopropanol (CAS 67-63-0, present as a solvent/thinner) which evaporates during use.

Component	CAS	Value	Control Parameters	Basis
isopropanol	67-63-0	STEL TWA	400ppm 200ppm	Canada. Ontario, Manitoba, B.C. and Alberta Occupational Health codes.
		TWAEV STEV	400ppm 983 mg/m ³ 500ppm 1230 mg/m ³	Canada. Quebec: Regulation respecting occupational health and safety. Sched. 1, Part 1: Permissible values for airborne contaminants
		TWA STEL	200ppm 400ppm	USA: ACGIH Threshold Limit Values (TLV)

8.2 Appropriate Engineering Controls

Provide ventilation to reduce exposure to isopropanol vapour.

8.3 Personal Protection Measures

Protection of the eyes: Goggles or face shield when there is a potential for eye contact

Protection of the skin: Rubber or Neoprene protective clothing when handling bulk amounts

Protection of the hands: Rubber or Neoprene gloves should be worn when the handling of circuit boards or connectors would lead to skin contact with material

Respiratory Protection: When using large volumes of this material, use a NIOSH/MSHA approved air purifying respirator equipped with organic vapor cartridges if isopropanol concentrations above 200ppm could occur.

9. Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

- **Appearance and Colour:** Thin clear liquid
- **Odour:** Sharp alcohol odour
- **Odour Threshold:** No data available
- **pH:** Not applicable
- **Melting Point:** -89° Celsius
- **Boiling Point:** 82.4° Celsius
- **Flash Point [method]:** 13° Celsius [Tag CC]
- **Evaporation Rate:** No tests run
- **Flammability:** Liquid and vapour are flammable.
- **Lower Explosion Limit (% by volume):** 2.0
- **Upper Explosion Limit (% by volume):** 12.0
- **Vapour Pressure:** 33mmHg (25° Celsius)
- **Vapour Density:** 2.01
- **Specific Gravity:** 0.853
- **Partition Coefficient (n-octanol/water):** No tests run
- **Solubility in water:** > 500 g/l
- **Auto-ignition Temperature:** 399° Celsius
- **Decomposition Temperature:** No tests run (>210° Celsius for Stabilant component)
- **Viscosity:** No tests run
- **Index of Refraction:** No tests run
- **VOC:** 75% (reportable)

10. Stability and Reactivity

10.1 Reactivity

Reacts with strong oxidizers, or highly reactive metals such as potassium

10.2 Chemical Stability

Stable under normal conditions

10.3 Possible Hazardous Reactions

None

10.4 Conditions to be Avoided

Avoid fire / excessive temperatures.

10.5 Incompatible Materials

Strong oxidizers, strong acids, strong bases, reactive metals - including aluminum at high temperatures.

10.6 Hazardous Decomposition Products

None

11. Toxicological Information

11.1 Toxicological Effects

- **Acute Toxicity:** Isopropanol is toxic, with Central Nervous System depressant effects, and inhalation or ingestion are to be avoided.
- **Skin Irritation:** The material is a mild irritant and may cause defatting / drying of the skin.
- **Eye Irritation:** Vapor is a mild irritant which may cause conjunctivitis and corneal damage. The liquid is a severe eye irritant and may cause permanent eye damage.
- **Inhalation:** Vapor may cause irritation of the respiratory tract.
- **Sensitization to Material:** Limited tests indicate no sensitization effects
- **Mutagenicity:** No tests run
- **Carcinogenicity:** No tests run; Under IARC, not classifiable as to carcinogenicity (Group 3).
- **Reproductive Effects:** No tests run
- **Teratogenicity:** No tests run
- **Aspiration Hazard:** Acute toxicity and pulmonary oedema may result from aspiration.

11.2 Routes of Exposure: Inhalation of isopropanol vapor and eye or skin contact should be avoided. Do not ingest.

11.3 Symptoms of Exposure: Exposure to isopropanol vapor or ingestion may produce drowsiness, headache, nausea, vomiting, diarrhoea, abdominal pain, incoordination. With severe overexposure, respiratory failure may occur, leading to coma or death.

11.4 Immediate or Chronic Effects of Exposure: Prolonged skin exposure may cause dermatitis. Overexposure by ingestion or inhalation may result in mild, reversible liver effects.

11.5 Numerical Data on Toxicity

- **LD₅₀ - oral:** 5000 mg/kg (rat)
- **LD₅₀ - skin:** 12800 mg/kg (rabbit)
- **LC₅₀ - inhalation:** 16000ppm/8H (rat)

12. Ecological Information

12.1 Ecotoxicity: Toxic to aquatic life at low concentrations

12.2 Persistence and Degradability: No tests run – No Data

12.3 Bioaccumulative Potential: No tests run – No Data

12.4 Mobility in Soil: No tests run – No Data

12.5 Other Adverse Effects: No Data

13. Disposal Considerations

13.1 Disposal of Waste

Dispose of waste materials in an approved incinerator or waste treatment/disposal facility in accordance with applicable regulations. Do not dispose of in sewer or with normal waste.

14. Transport Information

14.1 U.N. Number

UN1219

14.2 U.N. Proper Shipping Name

ISOPROPANOL

14.3 Transport Hazard Class

3

14.4 Subsidiary Class

None

14.5 Packing Group

II

14.6 Environmental Hazards

As appropriate for isopropanol.

14.7 Special Precautions

As appropriate for flammable liquids.

14.8 Transportation in bulk according to Annex II of MARPOL 73/78 and IBC code

Not Applicable

14.9 Schedule XII

Not Applicable

(Harmonized Tariff Code) 8541.50.00.80

15. Regulatory Information

15.1 Canada

This material is the Domestic Substances list under CEPA (not on NDSL).

This product has a WHMIS classification of B2, D2B.

15.2 United States

The materials in this product have been reviewed and are not reportable under SARA Title III.

These materials are listed on the TSCA inventory.

OSHA Classification: 29CFR1910.1200 - Flammable liquid, Eye irritant

15.3 Customs

The material is classified as *'Semiconductor, Other'*—Under "Harmonized Tariff Code 8541.50.00.80"

16. Other Information

16.1 Revision Information

Revision 26:

Preparation Date: May 22, 2015

Revision Changes: Updated to G.H.S standard from previous revision.

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

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 Stabilants or in the inks or 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.

16.3 Polybrominated biphenyls / polybrominated biphenyl ethers

Stabilant contain no PBB's or PBDE's and we so certify.

16.4 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.

16.5 PolyChlorinated Biphenyls

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.

16.6 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.

16.7 Key to abbreviations and acronyms:

ACGIH = American Association of Industrial Hygienists

CAS = Chemical Abstracts Service

CEPA = Canadian Environmental Protection Act (1999)

CFR = Code of Federal Regulations (re: EPA)

GHS = Globally Harmonized System of classification and labelling of chemicals

EPA = Environmental Protection Agency (U.S.A.)

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IBC = International Bulk Chemical code (re: Maritime shipping)

LD₅₀ = Lethal Dose (solids & liquids), which kills 50% of test animals

LC₅₀ = Lethal Concentration (gases), ""

MARPOL = MARine POLLution convention of 1973/78

MSHA = Mining Safety & Health Administration

NIOSH = National Institute of Occupational Safety & Health

OEL = Occupational Exposure Limit

OSHA = Occupational Safety and Health Administration (U.S.A.)

SARA = Superfund Amendments and Reauthorization Act (U.S.A., re: EPA)

TLV-C = Threshold Limit Value - Ceiling

TLV-STEL = TLV - Short Term Exposure Limit (15 min)

TLV-TWA = Threshold Limit Value-Time Weighted Average, 8 hrs/day and/or 40 hrs/week

TSCA = Toxic Substance Control Act (U.S.A.)

WHMIS = Workplace Hazardous Materials Information System

16.8 GHS Pictograms



Patented Canada 1987, US Patent 4696832. Others Pending.

NATO/CAGE Supplier Code #38948

-15mL Stabilant 22A has NATO Stock Number 5999-21-900-6937



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, or 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, customer 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 26