

SAFETY DATA SHEET – Stabilant 22A™

Technical Note Number 4

Revision Date: February 12, 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 (20° Celsius)
- **Vapour Density:** 2.1
- **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 on 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 27

Preparation Date: February 12, 2018

Revision Changes: No data changed - removed expiry date.

16.2 RoHS Legislation Article 4(1) pertaining to 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 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 Other RoHS Restricted Substances:

We certify that Stabilants contain no polybrominated biphenyls (PBB), polybrominated biphenyl ethers (PBE), polychlorinated biphenyls (PCB), nor any of these newly restricted substances: Di-(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Di-n-butyl phthalate (DBP) and Diisobutyl phthalate (DiBP). We further 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.

16.4 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 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.

16.6 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

16.7 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

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