CHEMTRONICS®

TDS# 1611

Technical Data Sheet

Electro-Wash® NX New & Improved!

Cleaner Degreaser

PRODUCT DESCRIPTION

Electro-Wash® NX New & Improved! Cleaner Degreaser is an extra strength, nonflammable electronics cleaner and degreaser. This high pressure aerosol cleaning agent quickly removes oxide particles, dust, oil and grease – evaporating quickly without leaving residue.

- Noncorrosive safe for metals
- Nonflammable
- Fast drying
- Removes oil, grease, dirt, silicone, flux, adhesive and other contaminants
- Contains no CFCs; contains HCFCs
- May be used on energized equipment
- Available with All-Way Spray valve

TYPICAL APPLICATIONS

Electro-Wash® NX New & Improved! Cleaner Degreaser is engineered for cleaning:

- Circuit Breakers
- Motors and Generators
- Plugs and Sockets
- Potentiometers
- Relays and Contacts
- Selector Switches
- Solenoids
- Switching Devices

TYPICAL PRODUCT DATA AND PHYSICAL PROPERTIES

Boiling Point	>99°F Initial	
Evaporation Rate (butyl acetate=1)	>1	
Flash Point (TCC)	None	
Specific Gravity	1.47	
Vapor Pressure @68°F	209 mm Hg	
Odor	Ethereal	
Solubility in Water	Negligible	
Kauri-Butanol (KB) Number	56	
VOC* Content:	Aerosol	Liquid
CARB	73%	100 %
SCAQMD	68 g/L	1108 g/L
Federal	4.6%	86 %
RoHS Compliant	RoHS WEEE Compliant	
Shelflife	Aerosols	5 years
	Liquids	2 years after opening

*Volatile Organic Compound (VOC) information is calculated on a weight basis using the VOC definition of California Air Resources Board (CARB) Consumer Product Regulations, South Coast Air Quality Management District (SCAQMD) Rule 102 and the Federal definition published in 40 CFR 51.100(s).

COMPATIBILITY

Electro-Wash® NX New & Improved! Cleaner Degreaser is generally compatible with most materials used in printed circuit board fabrication, except acrylics, ABS resins, polycarbonates and polystyrenes. With any cleaning agent solvent/component compatibility must be determined on a non-critical area prior to use

Material	Compatibility
Buna-N	Not Recommended
Graphite	Good
HDPE	Good
Kynar™	Poor
LDPE	Good
Lexan™	Not Recommended
Neoprene	Poor
Noryl®	Poor
Cross-Linked PE	Good
Polyacrylate	Not Recommended
Polystyrene	Not Recommended
PVC	Poor
Silicone Rubber	Not Recommended
Teflon™	Good
Viton™	Poor

Performance	
Grease Removal per gram solvent (mg)	
Electro-Wash NX	**14.0**
New & Improved! HFC-based Cleaner	**0.5**
Grease & Lubricating Oil Removal per gram solvent (mg)	
Electro-Wash NX	**22.1**
New & Improved! HFC-based Cleaner	**0.5**

USAGE INSTRUCTIONS

For commercial use only.
Read MSDS carefully prior to use.
Spray 4-6 inches from surface to clean. Wash parts from top to bottom, allowing the liquid to flush away dirt and dissolved grease. For precise application use attached extension tube.

AVAILABILITY

ES1611 12 oz. Aerosol
ES2211 18 oz. Aerosol
ES111 1 gallon Liquid

ENVIRONMENTAL IMPACT DATA			
HCFC-141b	None	HFC	Yes
HCFC-225	Yes	nPB	None

Hydrochlorofluorocarbons (HCFCs) are regulated under the Montreal Protocol as Class II ozone depleting substances. HCFC-141b is no longer produced in the US under this legislation. HCFC-225 is planned for production phase-out in 2015. Hydrofluorocarbons (HFCs) are not currently regulated.
EPA has listed n-propyl bromide (nPB) as an acceptable alternative to ozone depleting substances in metal, precision, and electronics cleaning under Section 612 of the Clean Air Act.

NOTE:
This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. ITW CHEMTRONICS® does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

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SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Information: 800-TECH-401

Product Identification

New & Improved Electro-Wash® NX

Product Code: ES1611, ES2211

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. % Range
HCFC-225ca	422-56-0	20.0-40.0
HCFC-225cb	507-55-1	20.0-40.0
Ethanol	64-17-5	2.0-4.0
Methanol	67-56-1	0.1-1.0
1,1,1,2-Tetrafluoroethane	811-97-2	10.0-30.0
Carbon Dioxide	124-38-9	1.0-5.0

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview: Clear, colorless liquid with faint ethereal odor. This product is nonflammable. Liquid may irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product vapor may produce dizziness and nausea.

Potential Health Effects:

Eyes: Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin: Prolonged contact can cause skin irritation, including redness, burning, drying and/or cracking of skin..

Ingestion: May be harmful if swallowed. Swallowing this material may result in nausea, vomiting and weakness followed by central nervous system depression.

Inhalation: Can be harmful if inhaled. High concentrations of vapors in immediate area can cause dizziness, nausea, vomiting, unconsciousness and death.

SECTION 4: FIRST AID MEASURES

Eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel if irritation develops or persists.

Skin: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persist. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting. If conscious, give 2 glasses of water. Never give anything by mouth to an unconscious person. Keep head below knees to minimize chance of aspirating material into the lungs. Get medical attention immediately.

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: None to boiling (TCC)

Extinguishing Media: Use water spray or fog, CO2, dry chemical or water stream when fighting fires involving this material.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus (pressure-demand, MSHA/NIOSH-approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spills: Shut off leak if possible and safe to do so. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container for proper disposal. Do not flush to sewer. Avoid runoff into storm sewers and ditches which lead to waterways.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with eyes, skin, and clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor or mist. Do not reuse this container. Store in a cool dry place away from heat, sparks and flame. Do not store in direct sunlight.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

CHEMICAL NAME	ACGIH TLV	OSHA PEL	OTHER
HCFC-225 ca/HCFC-225 cb	not established	not established	100 ppm*
Ethanol	1000 ppm	1000 ppm	
Methanol	200 ppm	200 ppm	
1,1,1,2-Tetrafluoroethane	not established	not established	1000 ppm*
Carbon Dioxide	5000 ppm	5000 ppm	30,000 ppm STEL

***** Supplier's Occupational Exposure Limit

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. If vapor concentration exceeds TLV, use NIOSH approved organic vapor cartridge respirator. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves.

NFPA and HMIS Codes:	NFPA	HMIS
Health	1	1
Flammability	0	0
Reactivity	1	1
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear, colorless liquid
Odor: Slight Ethereal Odor
pH: NA
Composite Vapor Pressure: 289 mmHg @ 68° F
Boiling Point: 130°F (54C)
Vapor Density: 7.0 (air = 1)
Solubility in Water: Negligible
Specific Gravity: 1.55
(Water =1)
Evaporation Rate: >1 (Butyl acetate=1)
Percent Volatile: 100%

SECTION 10: STABILITY AND REACTIVITY

Stability - This product is stable.
Conditions to Avoid: Steam, oxidizers, elevated temperatures. Do not spray near open flames, red hot surfaces or other sources of ignition.
Incompatibility: Do not mix with alkali metals, pure oxygen, strong base, open flames, and welding arcs. This product should not be used in long term contact with aluminum or zinc or their alloys.
Products of Decomposition: Thermal decomposition may release carbon monoxide, carbon dioxide and incompletely burned hydrocarbons as well as hydrochloric and hydrofluoric acid vapor.
Hazardous Polymerization: Will not occur
Conditions to Avoid: Finely divided active metals, alkali and alkaline earth metals

SECTION 11: TOXICOLOGICAL INFORMATION

Inhalation:		Ingestion:	
AK225ca / AK225cb	LC50 rat 37,300 ppm/36,800 ppm (4hr)*	AK225ca / AK225cb	LD50/rat >5000 mg/kg*
Ethanol	LC50 rat 20,000 ppm/10 hr *	Ethanol	LD50/rat 7060 mg/kg *
Tetrafluoroethane	Rat ALC 567,000ppm/4hrs*	Methanol	LD50 rat 5628 mg/kg*
Methanol	LC50 rat 64,000 ppm/4hrs*		

Skin			Eye:	
AK225ca / AK225cb	LD50rabbit	>2,000 mg/kg*	AK225ca / AK225cb	Not an irritant*
Ethanol	LD50rabbit	400 mg open MLD *	Ethanol	500 mg SEV *
Methanol	20mg/24H	MLD *	Methanol	rabbit 40 mg MOD *

*Information provided by manufacturer.
Cancer Information: No ingredients in this product are listed as human carcinogens by IARC or NTP.
Reproductive effects: none Teratogenic effects: none Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

REPORTING

US regulations require reporting spills of this material that could reach any surface waters.
The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATION

	Proper Shipping Name	UN Number	Class	Sub. Risk	Pkg. Group	Hazard Label	Pkg. Instr.	Max. Quantity
Air:	Aerosols non-flammable	UN 1950	2.2	NA	NA.	Non-flammable gas	203	75 k.g; 150k.g.
Ground:	Consumer Commodity ORM-D	NA	ORM-D	NA	NA	ORM-D	Pkg. Auth.	173.306

SECTION 15: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION

This product contains the following chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

Chemical Name	**CAS No.**	**Wt. % Range**
HCFC-225ca	422-56-0	20.0 - 40.0
HCFC-225cb	507-55-1	20.0 - 40.0
Methanol	67-56-1	0.1-1.0

This information should be included on all MSDSs copied and distributed for this material.

TOXIC SUBSTANCES CONTROL ACT (TSCA).

All ingredients of this product are listed on the TSCA Inventory.
WHMIS: Class A; Class D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION

This product is a Level 1 aerosol. Do not puncture or incinerate containers. Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released. This MSDS is applicable to products manufactured after June 25, 2004 (date code of 4176 or higher).

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.