Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Section 1	**CHEMICAL PRODUCT SECTION**

Identification: Product Name: Precision Rinse VT
Product Number: 8604, AS6300

Product description: Cleaner and degreaser for electrical assemblies
Product type: aerosol chemical cleaner
Application: Industrial applications

Manufacturer:
ACL Incorporated
840 W 49th Place
Chicago, Il 60609
PH: (01) 847.981.9212 [U.S.A.]
FAX: (01) 847.981.9278 [U.S.A.]

Email of responsible party for SDS: marykay@aclstaticide.com

US/Canada Emergency TEL: INFOTRAC: (01) 800.535.5053 (day or night)
International Emergency TEL: INFOTRAC: 352.323.3500 (day or night)

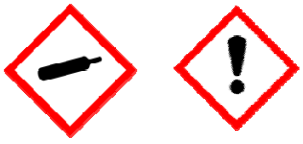
Section 2	**HAZARDOUS IDENTIFICATION**

2.1 Classification of the substance or mixture
Product definition: Mixture

Physical: Aerosol / category 3
Health: Skin irritation / category 2
Eye irritation / category 2A
Environmental: None

2.2 Label Elements

Hazard Pictograms:



Signal Word: Warning

Hazard Statement:
Pressurized container; may burst if heated
Harmful if swallowed or in contact with skin (H302 + H312)
Causes skin irritation (H315)
Causes serious eye irritation (H319)

Precautionary Statements:
General:
If medical advice is needed, have container or label at hand (P101)
Keep out of reach of children (P102)
Read label before use (P103)

Prevention:
Wash hands thoroughly after handling (P264)
Do not eat, drink, or smoke when using this product (P270)
Wear protective gloves, protective clothing and eye protection (P280)
Response:
IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305 +P351 + P338)
If eye irritation persists, get medical attention or advice (P337 + P313)
IF ON SKIN, wash with plenty of water. (P302 + P352)
Take off contaminated clothing and wash before reuse (P362 + P364)
Call doctor center if you feel unwell (P312)
If skin irritation or rash occurs: Get medical attention (P332 + P313)

Storage: NE (see section 7)
Disposal: Dispose of contents in accordance with state and local laws as they vary (P501)

Unknown Acute Toxicity: No data available

Section 3 COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL	C.A.S. Number	EC#	Weight %	EU Classification and Risk phrases
HFC-4310	138495-42-8	420-640-8	2-12%	R52-53
Pentafluorobutane	406-58-6	430-250-1	15-25%	F; R11
Solstice	102687-65-0	Not Established	5-15%	Not Established
Trans-1,2-Dichloroethylene	156-60-5	205-860-2	15-25%	F; R11 Xn; R20 R52-53
1,1,1,2 Tetrafluoroethane	811-97-2	212-377-0	20-30%	not classified
Carbon Dioxide	124-38-9	204-696-9	2-12%	not classified

Section 4 FIRST AID MEASURES

4.1 Description of first aid measures
*Inhalation***:** Move to fresh air. If the affected person is not breathing, apply artificial respiration. Get immediate medical attention.

Eye Contact: Immediately flush eyes with large amounts of cold water for 15 minutes while holding eyelids open. If irritation persists, get medical attention.

*Skin Contact***:** If irritated, Wash with soap and water. Get medical attention if irritation persists.

Ingestion: If the material is swallowed, get immediate medical attention or advice. DO NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Seek immediate medical attention. Do not give anything.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. Wear gloves

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
4.3 Indication of any immediate medical attention and special treatment needed
No data

Section 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media: Use dry chemical, carbon dioxide, or foam. Use water to cool fire-exposed containers and to protect personnel.
Unsuitable extinguishing media: Do not direct a solid stream of water or foam into hot, burning pools this may results in frothing and increase fire intensity.

5.2 Special hazards arising from the substance or mixture
Hazards from the substance or mixture: Dangerous when exposed to heat or flame. This material can be ignited by flame or spark under normal atmospheric condition. Pressurized Container: May explode when exposed to heat or flame. Empty containers may retain product residue including flammable vapors. DO NOT cut, drill, grind, or weld near full, partially full, or empty product containers

Hazardous thermal decomposition products: Unknown

5.3 Advice for firefighters
Special protective actions for fire-fighters: At elevated temperatures (over 120°F) containers exposed to direct flame or heat contact should be cooled with water to prevent weakening of container structure. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Special protective equipment for fire-fighters: Container could potentially burst or be punctured upon mechanical impact, releasing flammable vapors. **Unusual Fire & Explosion Hazards:** During a fire, irritating and highly toxic gases may be generated during combustion or decomposition. High temperatures can cause sealed containers to rupture due to a buildup of internal pressures. Cool with water

Section 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: Remove all sources of ignition and ventilate area. Evacuate the area promptly and keep upwind of the spilled material.

6.2 Environmental precautions Isolate the spill area to prevent people from entering. Wear appropriate protective equipment and clothing during clean-up. Stop discharge if safe to do so. Stop material from contaminating soil or from entering sewers or water streams. Cover spills with non-flammable absorbent and place in closed chemical waste containers.

6.3 Methods and materials for containment and cleaning up
Small spill: Immediately contact emergency personnel. Stop leak if without risk

Large spill: Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

6.4 Reference to other sections
See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7 HANDLING AND STORAGE

7.1 Precautions for safe handling
Protective measures: Keep this product away from heat, sparks or open flame. Avoid sources of ignition Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene: Attention! Follow label warnings even after container is emptied since empty containers may retain product residues. Do not reuse empty container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 50 °C (122 °F).

7.3 Specific end use(s)
Recommendations: Acrylic coating for PCB and flex circuit protection
Industrial sector specific solutions: Unknown

Section 8 EXPOSURE CONTROL / PERSONAL PROTECTION

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200): Exposure Limits 8 Hours TWA (ppm)

Component	CAS	Value	Control parameters	Basis
HFC-4310	138495-42-8	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Pentafluorobutane	406-58-6	TWA	1000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Solstice	102687-65-0		No data	
Trans-1,2-Dichloroethylene	156-60-5	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
1,1,1,2-Tetrafluoroethane	811-97-2	TWA	1,000 ppm	USA Workplace Environmental Exposure Levels (WEEL)
Carbon Dioxide	124-38-9	TWA	5,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	30,000 ppm	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls
Appropriate engineering controls: Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Individual protection measures
Hygiene measures: Wash hands before eating, smoking and using the lavatory and at the end of the working period. When using, do not eat or drink. When using, do not smoke.
Eye/face protection: Ensure that eyewash stations are proximal to the work-station location**.** Safety glasses with side shields are recommended.

Skin protection: Avoid prolonged or repeated skin contact. Impervious gloves such as nitrile, neoprene or rubber are recommended.
Hand protection: Impervious gloves should be used when handling this product. Use of protective coveralls and long sleeves is recommended.
Body protection: NE
Respiratory protection: Use NIOSH approved respiratory protection. High airborne concentrations may necessitate the use of self-contained breathing apparatus (SCBA).
Environmental exposure controls: For normal conditions, protection is not necessary.
In Case of Large Spill: Keep out of drains. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Aerosol, liquid, clear colorless
Odor	Mild; ethereal solvent
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	NE / NE
Flash point and method	NE / NE
Evaporation rate (H2O=1)	>1 (butyl acetate=1)
Flammability (solid, gas, liquid)	Non flammable
Upper/lower flammability or explosive limits	9.5 upper % by volume concentrate 3.8 lower % by volume concentrate N/A upper % by volume propellant N/A lower % by volume propellant
Vapor pressure	NE
Vapor density (air=1)	Less than air
Water solubility.	Miscible
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No data available

9.2 Other safety information

Specific Gravity	1.25
VOC	SCAQMD: 410 g/L Federal: 20%

Section 10 STABILITY AND REACTIVITY

10.1 Reactivity: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability: Stable under normal storage conditions. Can become unstable (self-react at high temperatures and pressures.
10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid: Keep away from heat, direct sunlight, open flames, sparks, or sources of ignition.
10.5 Incompatible Materials: Strong oxidizing agents, reducing agents, acids, bases.
10.6 Hazardous decomposition products: Carbon monoxide, carbon dioxide and hydrocarbon vapors.

Section 11 TOXICOLOGY INFORMATION

Acute toxicity:

Product/ingredient name	**Result**	**Species**	**Dose**	**Exposure**
HFC-4310 CAS #138495-42-8	LD500 Oral LD50 Dermal	Rat Rabbit	>5000 mg/kg >5000 mg/kg	--- ---

Pentafluorobutane CAS# 406-58-6	LD500 Oral LC50 Inhalation	Rat Rat	>2000 mg/kg >10,000 ppm	-- 4 h
Solstice CAS #102687-65-0	No data available			
Trans-1,2-Dichloroethylene CAS #156-60-5	LC50 Inhalation LD50 Oral LD50 Dermal	Rat Rat Rabbit	24,100 ppm 1235 mg/kg >5000 mg/kg	--- --- ---
1,1,1,2-Tetrafluoroethane CAS #811-97-2	LC50 Inhalation	Rat	1,500,000 mg/m3	4 h
Carbon Dioxide CAS #124-38-9	No data available			

Irritation/Corrosion:

Product/ingredient name	**Result**	**Species**	**Exposure**
HFC-4310 CAS #138495-42-8	Mild skin irritation Mild eye irritation	animals animals	--- ---
Pentafluorobutane CAS# 406-58-6	No skin irritation No eye irritation	Rabbit Rabbit	
Solstice CAS #102687-65-0	No data		
Trans-1,2-Dichloroethylene CAS #156-60-5	skin irritation eye irritation	Rabbit Rabbit	24 h ---
1,1,1,2-Tetrafluoroethane CAS #811-97-2	Mild eye irritation Mild skin irritation	Rabbit Rabbit	24 h
Carbon Dioxide CAS #124-38-9	No data		

Sensitization:

Product/ingredient name	**Result**	**Species**	**Exposure**
HFC-4310 CAS #138495-42-8	No data		
Pentafluorobutane CAS# 406-58-6	Does not cause skin sensitization	Guinea Pig	
Solstice CAS #102687-65-0	No data		
Trans-1,2-Dichloroethylene CAS #156-60-5	No data		
1,1,1,2-Tetrafluoroethane CAS #811-97-2	Does not cause skin sensitization	Guinea Pig	
Carbon Dioxide CAS #124-38-9	Does not cause skin sensitization	Guinea Pig	

Mutagenicity:

Product/ingredient name	**Result**	**Species**	**Test**
HFC-4310 CAS #138495-42-8	No data		
Pentafluorobutane CAS# 406-58-6	Did not show mutagenic effects		In vitro tests
Solstice CAS #102687-65-0	No data		
Trans-1,2-Dichloroethylene CAS #156-60-5	No data		
1,1,1,2-Tetrafluoroethane CAS #811-97-2	Negative	Rat	Ames test Method: OECD Test Guideline 486

Carbon Dioxide CAS #124-38-9	No data		

Carcinogenicity: Conclusion/Summary:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

Reproductive toxicity: Not available.
Teratogenicity: Not available
Specific target organ toxicity (single exposure): Not available
Specific target organ toxicity (repeated exposure): Not available.
Aspiration hazard: Not available
Information on the likely routes of exposure: Not available.
Additional Information: None

Section 12 ECOLOGICAL INFORMATION

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
HFC-4310 CAS #138495-42-8	LC50 > 13.9 mg/l LC50 > 11.7 mg/l	Oncorhynchus mykiss (rainbow trout) Daphnia (water flea)	96 h 48h
Pentafluorobutane CAS# 406-58-6	LC50, > 200 mg/l EC50 >200 mg/l NOEC = 13.2 mg/l EC50 > 114 mg/l NOEC, growth, >=6 g/m 3	Brachydanio rerio Daphnia magna Selenastrum capricornutum Selenastrum capricornutum Terrestrial plants	96 h 48 h 72 h 72 h
Solstice CAS #102687-65-0	No data		
Trans-1,2-Dichloroethylene CAS #156-60-5	EC50 > 220 mg/l	Daphnia (water flea)	48 hours
1,1,1,2-Tetrafluoroethane CAS #811-97-2	LC50 > 450 mg/l EC50 > 980 mg/l EC50 > 730 mg/l	- Oncorhynchus mykiss (rainbow trout) Daphnia (water flea) Pseudomonas putida > 730 mg/l -	96 hours 48 hours 6 hours
Carbon Dioxide CAS #124-38-9	No data available		

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Biodegradability
HFC-4310 CAS #138495-42-8	No data
Pentafluorobutane CAS# 406-58-6	*Abiotic degradation:* Air, indirect photo-oxidation, t ½ ca. 10.8 y Water/soil, Hydrolysis Result: not significant *Biodegradation:* Aerobic, tested according to: ready biodegradability/NMITI, 2% after 28 d Result: Not readily biodegradable.
Solstice CAS #102687-65-0	No data
Trans-1,2-Dichloroethylene	No data

CAS #156-60-5	
1,1,1,2-Tetrafluoroethane CAS #811-97-2	aerobic - Exposure time 28 d Result: 3 % OECD Test Guideline 301D / Readily biodegradable
Carbon Dioxide CAS #124-38-9	No data

Conclusion/Summary : Not available

12.3 Bioaccumulative potential

Product/ingredient name	**Potential**
HFC-4310 CAS #138495-42-8	No data
Pentafluorobutane CAS# 406-58-6	Bio-accumulative potential: log Pow 1.61 Result: Does not bio-accumulate.
Solstice CAS #102687-65-0	No data
Trans-1,2-Dichloroethylene CAS #156-60-5	No data
1,1,1,2-Tetrafluoroethane CAS #811-97-2	No data
Carbon Dioxide CAS #124-38-9	No data

12.4 Mobility in soil
Soil/water partition coefficient (K_{OC}): Not available.
Mobility: Not available.
12.5 Results of PBT and vPvB assessment
PBT: Not available.
vPvB: Not available.
12.6 Other adverse effects: No known significant effects or critical hazards.
This product does not contain chlorinated solvents or lead.

Section 13 DISPOSAL CONSIDERATIONS

Waste Treatment Methods
Disposal of Wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations. **Do not puncture, incinerate or compact aerosol can.** When contents are depleted continue to depress button until all gas is expelled.

Contaminated Packaging: Disposal should be in accordance with applicable regional, national and local laws and regulations

Section 14 TRANSPORTATION INFORMATION

	Proper Shipping Name	**Hazard Class**	**UN number**	**NOTE**
US DOT ground	Consumer Commodity	ORM-D	NA	Flame projection testing in accordance with 16CFR1500.45 found no flame projection.
US DOT air	AEROSOLS, non-flammable, (each not exceeding 1L capacity)	2.2	UN1950	May be classified as Consumer commodity, ID 8000, class 9, Y963 packing instruction DOT Labels required: Non-Flammable Gas
IATA	AEROSOLS, non-flammable, (each not exceeding 1L capacity)	2.2	UN1950	IATA Labels required: Non-Flammable Gas
IMDG	AEROSOLS, non-flammable, (each not exceeding 1L capacity)	2.2	UN1950	Limited Quantity: Y203

Section 15 REGULATORY INFORMATION

United States Federal Regulations: SDS complies with the OSHA Rule, 29 CFR 1910.1200.
CERCLA/Superfund, 40 CFR 117, 302: Trans-1,2-Dichloroethylene 1000RQ

SARA Superfund and Reauthorization Act of 1986 Title III sections 302, 311,312 and 313:
Section 302 – None of the chemicals are Section 302 hazards

CHEMICAL	C.A.S. Number	Weight %	Section 311/312
Pentafluorobutane	406-58-6	10-20%	Fire Hazard

Section 313 – List of Toxic Chemicals (40CFC 372): This product does not contain chemicals (at level of 1% or greater) found on the 313 list of Toxic Chemicals.

Toxic Substance Control Act (TSCA): **All substances are TSCA listed.**

Resource Conservation and Recovery Act (RCRA 40 CFR 261) Subpart C & D: Refer to Section 13

Federal Water Pollution Control Act, Clean Water Act, 40 CFR 401.15 (formerly section 307) 40 CFR 116 (formerly section 311): This product does not contain listed chemicals

STATE REGULATIONS:
This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.
California Proposition 65: This product does not contain Prop 65 chemicals.
California Safer Consumer Products List: This product does not contain listed chemicals.

INTERNATIONAL REGULATIONS:
Canada WHMIS: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

REACH: To the best of our ability, this SDS is written in accordance to REACH Directive EC1907/2006 Annex II and GHS requirements. This product does not contain substances listed on the Candidate List of Substances of Very High Concern (SvHC).

Sections 16 OTHER INFORMATION

HMIS HAZARD RATING:
Health: Irritation or minor reversible injury possible
Fire: Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Reactivity: Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures
Protective Equipment: Safety goggles and gloves

1	HEALTH
1	FLAMMABILITY
1	PHYSICAL HAZARD
B	PROTECTIVE EQUIPMENT

REVISION DATES, SECTIONS, REVISED BY:

19-Aug-13	Original Preparer: Steve Allen
09-OCT-13	Review, mkb
10-Jan-14	Changed part#, mkb
26-May-16	All sections, mkb

ABBREVIATIONS USED IN THIS DOCUMENT:
NE – Not Established, NA – Not Applicable, NIF – No Information Found, ND – Not Determined

ABRIDGED LIST OF REFERENCES:
Code of Federal Regulations (CFR)

The Sigma-Aldrich Library of Regulatory and Safety Data
Chemical Guide and OSHA Hazardous Communication Standard
The Environmental Protection Agency (www.epa.gov)
http://oehha.ca.gov/prop65/prop65_list
http://orise.orau.gov/emi/hazards-assessment/files/resources/epa-title3.pdf

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