



VindEX Coastal Application Instructions

Personal Safety and PPE concerns:

VindEX Coastal is a derivative of a medical-grade polymer used extensively as a medical device to cure numerous medical conditions. Casual contact with the product will not produce harmful side effects. Standard PPE consisting of gloves, safety goggles and a basic filtering facemask (dust mask) as described in OSHA §1910.134(b). The dust mask is required to eliminate the possibility of inhaling the polymer vapors.

Additional Precautions: Prolonged exposure to high concentrations of acetone vapors may require additional PPE considerations. Consult OSHA 29 CFR 1910 or OSHA 29 CFR 1926 for additional PPE requirements. The normal intermittent application of **VindEX Coastal** in well ventilated environments would not normally require additional precautions.

Cure Time:

VindEX Coastal cures rapidly as the Acetone base evaporates leaving the base product on the surfaces to be protected. The Acetone rapidly vaporizes and fire concerns diminish quickly. Once a film is evident, usually two to four minutes after application, the product presents a very low fire hazard. Do not stop ventilating the area for at least 15 minutes after application if the product is used indoors.

Total cure time is a function of temperature and specific humidity of the air surrounding the surfaces treated. As drybulb temperatures go up curing time is increased. Water vapor in the air has a significant impact on cure time. If ambient conditions are above 75°F drybulb and 65°F wetbulb cure time could be 30-minutes or longer

When used to coat condenser coils in air conditioning and refrigeration applications, starting the equipment after a film is evident on the applied product (after the acetone vaporizes) will help the curing process. The heat from the condenser coil and airflow over the coil will reduce the cure time.

Fire Safety:

VindEX Coastal is a highly effective product for preventing the formation of corrosion on mono-metal and bi-metal coils by elimination of contact with environmental contaminants. Acetone is the vehicle that delivers **VindEX Coastal** to coil surfaces and helps degrease and clean the surfaces that it comes in contact with. Acetone also dries rapidly helping produce a finished polymer product that cures quickly and allows the equipment to be put in operation within minutes of the application.

- **Ventilation is required for the area that **VindEX Coastal** is being applied since acetone vapors are flammable. Follow the application instructions carefully.**
- ****VindEX Coastal** is a professional use product only.**
- ****VindEX Coastal** is a class III flammable liquid and it is intended for application by HVAC Industry Professionals only. Do not resell this product to home owners or untrained individuals that are unaware of the risks associated with HVAC system maintenance and service, or the application specific safety procedures of **VindEX Coastal** application.**

- Do not smoke while applying **VindEX Coastal**
- Do not use near any ignition sources
- Do not spray on energized equipment – disconnect power before applying
- Do not use in confined spaces
- Do not use in unventilated spaces
- Do not expose yourself or others to sustained or prolonged exposure to **VindEX Coastal** vapors.
- Do not ingest the product
- Do not get the product in your eyes
- Do not allow unqualified employees or members of general public access to **VindEX Coastal**

Outdoor Application Instructions:

Outdoor applications: in order for **VindEX Coastal** to be effective, the outdoor coil must be clean. The protection afforded by **VindEX Coastal** is enhanced when applied to new equipment that has never been run, and has no existing dirt or corrosion on the coil. Pratl Technologies highly recommends the application of **VindEX Coastal** to all new systems installed within 10,000 feet of saltwater, and on all coils used in marine applications.

New Equipment:

1. When applying **VindEX Coastal** on new outdoor coils, cleaning and drying is unnecessary, two spray heads are shipped with the 32 ounce bottle of **VindEX Coastal**. The product is ready to use and requires no mixing or shaking prior to use. Remove the shipping lid from the bottle and insert one of the spray heads. Adjust the spray with a few sample sprays before attempting to coat the coil.
2. In order for **VindEX Coastal** to be effective at preventing corrosion all the metal in the coil needs to be encapsulated with the polymer. Adjust the spray head to deliver a powerful stream so that the polymer is forced through the coil rows and coats all the tubing, tube sheets and fins.
3. Condenser coils usually have fewer rows than indoor coils, so complete coverage is easier to achieve on outdoor coils. Spine-fin coils used by Trane and American Standard are easier to coat with an atomizing spray instead of a power stream. Adjust the spray to fit the application keeping in mind the focus is complete encapsulation of the metal coil components.
4. Be prepared to catch the over spray and the runoff since over-application is required to insure complete coil coverage. **VindEX Coastal** will not harm building surfaces, wood products, metal or living organisms if exposed to overspray or runoff. However, **VindEX Coastal** will cure and coat any surface and care must be used to collect runoff and control overspray. If **VindEX Coastal** is applied to cabinet parts corrosion protection will be afforded to the cabinet parts. **VindEX Coastal** will discolor over time when exposed to direct ultra violet light, so applications on cabinets will discolor over time. If discoloration is an issue, do not apply **VindEX Coastal** to cabinet parts.
5. The most effective method of application requires the removal of any coils guards or louvers. This often requires the top of the unit and fan to be removed as well as the louvers that protect the coil.

6. Follow manufactures specific service and installation instructions for disassembly of the unit in order to get the unit in a condition where you have full access to the coil surfaces. Follow all standard service procedures for safety and lock-out and tag-out the equipment prior to applying the product or disassembly of the unit.
7. The Acetone in **VindEX Coastal** will vaporize within minutes of contact with the coil surfaces and the fire danger is eliminated once the polymer begins to cure. Once **VindEX Coastal** begins to cure (about five minutes) reassembly of the unit can occur and it is safe to energize the equipment as soon as the unit is reassembled and all tools are removed from the unit.
8. Run and test the equipment and the application are complete. Close the nozzle on the sprayer by turning it clock wise until it stops and wipe the nozzle so it does not clog with cured product.
9. Reapplication is recommended annually with coastal equipment and possibly more frequently in marine applications.

Existing Equipment:

When applying **VindEX Coastal** to existing equipment, a thorough cleaning and complete drying is required before the application. Based on tests completed by Pratl Technologies and the United States Marine Corp, the application of **VindEX Coastal** will stop corrosion in its tracks and prevent further corrosion.

Application is the same as with new equipment, but cleaning and drying is imperative to the performance of the product and the efficiency of the equipment. All safety consideration mentioned in this document also applies to existing equipment applications.

Indoor Application Instructions:

Prior to spraying the coil, windows to the exterior of the structure must be opened to allow proper ventilation. A ventilation fan must be used to keep air moving across the area where surfaces are to be coated and to dissipate the product vapors until the product cures, which is usually less than 5-minutes. **An adequate ventilation fan would be equal to Global Industrial, stock # WY246430 available online at www.globalindustrial.com.**

1. Once the fan is in place and operational, the coil surface must be prepared. The coil should be clean and dry prior to application of **VindEX Coastal**, Clean the coil using standard industry practices keeping in mind any dirt left on the coil will be encapsulated and remain indefinitely on the coil surface. **Effective coil cleaning is imperative** to maintaining operating efficiency once **VindEX Coastal** is applied.
2. Once the coil is clean **the coil must be dry** prior to the application of **VindEX Coastal** so the product can cure rapidly and maintain its polymer qualities. If the coil is a heat pump, run the unit in the vapor compression heating mode for three to five minutes to quickly dry the coil. If the coil is an A/C only coil run the fan only for about five minutes to dry the coil.

Indoor Application Instructions (cont'd):

3. When the coil is dry the product can be applied with the sprayer supplied in the shipping bag with this instruction sheet. **Turn all power off to the air handler or furnace. Any other equipment located in the crawl space that can create an arc must also be turned off during the application and drying process.**
4. Remove the shipping cap and carefully insert the sprayer. Once the sprayer is inserted and tightened to the bottle, make a sample spray to insure the product is delivering properly. Keep the ventilation fan running during spraying to keep the vapor concentration diluted. Do not allow the ventilation blower to blow directly at the coil surface as this will affect coil coverage and the spray pattern.
5. In order for the product to serve its intended purpose, **it must coat 100% of the indoor coil** and seal the coil metals from exposure to the air. The sprayer should be adjusted to deliver a spray forceful enough to push the product into the coil fins and cover the inner tubes. A light mist will only coat the outer surfaces and corrosion will occur.
6. Protect indoor surfaces such as carpets, hardwood floor and tile from over-spray of the product. Coat the coil completely and allow product to flow freely onto the drain pan and out the drain line. **Small cracks in the drain pan will be sealed by VindEX Coastal** as long as the drain pan is dry before application. Once the coil is totally coated and sealed with **VindEX Coastal**, and excess product has drained from the drain pan, **replace the condensate trap to insure long-term proper drainage.** If high-value condensate traps are installed, remove them before the application of **VindEX Coastal** and catch the runoff with a separate container. Reinstall the trap properly when complete with the coil treatment. Be sure and fill the trap with water for proper drainage.
7. Once the product is dry to the touch, the covers can be reinstalled and the unit placed back into operation. **VindEX Coastal cures in 15 to 30 minutes under normal conditions.** Dry time can be longer under extreme specific humidity conditions. If the wetbulb temperature is above 65°F allow at least 15-minutes extra to cure before placing back into operation. **Be sure the crawl space is properly ventilated at all times during the application and drying process.** Be sure and fill condensate traps and test oil drainage and drain line operation before leaving the job.
8. Once the unit is placed back in operation and the space has been properly ventilated, the ventilation fan is no longer required for vapor dilution and can be turned off and stowed for transport.





VindEX Coastal MATERIAL SAFETY DATA SHEET

PRODUCT AND COMPANY DETAILS

Manufactured for: Pratl Technologies, LLC

Address: 5540 Centerview Drive, Raleigh NC, USA

Contact: Phone 800-317-7095; Fax 919-834-7127

Emergency: 911 for fire or ambulance; Poison Control Center: 800-222-1222

CHEMICAL IDENTIFICATION

Chemical Name: Poly(urea-urethane)

Chemical Classification: Solvent based Polyurethane Copolymer

Chemical *	CAS	Percent [w/w]	Exposure Limits
Polyurethane Copolymer	9009-54-5	16	Not Established
Acetone	67-64-1	75	NIOSH REL: TWA 250 ppm (590 mg/m ³); OSHA PEL: TWA 1000 ppm (2400 mg/m ³); IDLH 2500 ppm [10 % LEL]
Methyl Ethyl Ketone	78-93-3	9	NIOSH REL: TWA 200 ppm (590 mg/m ³); NIOSH STEL 300 ppm (885 mg/m ³); OSHA PEL: TWA 200 ppm (590 mg/m ³); IDLH 3000 ppm

* All other components are below 1% in the formulation

HAZARD IDENTIFICATION & HEALTH HAZARD

Eye: Direct contact with liquid may cause mild irritation and discomfort.

Inhalation: Avoid breathing vapors. Prolonged exposure may cause headaches, dizziness, drowsiness, and nausea leading to unconsciousness.

Ingestion: May be harmful if swallowed. May lead to nausea, weakness, and central nervous system effects.

Mode of Entry: Skin, inhalation, ingestion.

FIRST AID MEASURES

Eye Contact: Wash eyes for at least 15 minutes with water. Seek medical attention if irritation develops.

Inhalation: Remove to fresh air immediately. If not breathing give artificial respiration. Seek immediate medical attention.

Ingestion: Do not induce vomiting unless directed by medical professional. Do not give anything to an unconscious person. Seek immediate medical attention.

FIRE FIGHTING MEASURES

Flash Point: Flammable liquid and vapor. Boiling point (B.P.) and flash point (Fl.P.) of pure individual components: Acetone (B.P. 57 °C / Fl.P. -20 °C); MEK (B.P. 80 °C / Fl.P. -9 °C).

Extinguishing media: Extinguish with alcohol resistant foam or water spray in case of a large fire. In case of a small fire, use dry chemical powder to extinguish.

Fire fighting procedures: As in any fire fighting procedure, wear complete fire service protective equipment, including full-face, self-contained breathing apparatus and protective butyl rubber clothing. Avoid unnecessary run-off of extinguishing media. Vapor may accumulate in low lying areas and travel considerable distance to source of ignition and flashback. Sudden reaction and fire may result if product is mixed with a strong oxidizing agent. Closed containers may explode when exposed to extreme heat (fire). Toxic and irritating fumes are possible under fire conditions.

ACCIDENTAL RELEASE MEASURES

General information: Full protection gear, full alert to fire hazard possibility. Spilled polyurethane may impede movement, take due care

Spills / Leaks: Stop leaks, contain spillage by any means available, use low sparking hand tools and intrinsically safe equipment, dyke large spill area and collect material into containers. For small spills, absorb substance in sand or earth or any other suitable material, or cover with alcohol resistant foam. Wash area thoroughly as it will become sticky later. If substance has entered a water course of sewer, inform the responsible authority. Ventilate sewers and basements where there is no risk to personnel or public.

HANDLING AND STORAGE

Handling: Provide mechanical exhaust to keep airborne levels within limits. Eliminate sources of ignition. Use non-sparking tools and flame-proof equipment. Avoid contact with eyes and keep out of reach of children.

Storage: Store in a well ventilated cool place. Keep away from source of ignition.

EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls: Use in well ventilated area.

Personal Protective Equipment: Eye protection – chemical safety glasses / splash proof eye goggles.

Skin Protection – Chemical resistant gloves, long sleeved shirts and long pants are recommended.

Respiratory Protection – None required under anticipated conditions.

PHYSICOCHEMICAL PROPERTIES

Appearance: Yellow, Clear to Moderately Opaque

Solubility in Water: Insoluble

Boiling Point: Not Determined

Boiling Point: Not Determined

Flash Point: <-10°C

Odor: Mild, Ketonic Solvents

STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: Avoid contact with heat, sparks, flames or other sources of ignition

Incompatibilities: Oxidizing materials

Hazardous Decomposition Products: None

Hazardous Polymerization: None

Flammability: Final cured product has low flammability

TOXICOLOGICAL INFORMATION

Acute Effects: Vapor may cause drowsiness, dizziness, vomiting, and nausea. Vapors may be irritating to the eyes.

Toxicity:

	CAS	RTECS	LD₅₀ Oral	LD₅₀ Skin	Inhalation
Polyurethane	9009-54-5	Not Availab	Not Available	Not Available	Not Available
Acetone	67-64-1	AL3150000	Rat 5,800 mg/kg	Guinea pig >9400 µL/kg	Rat LD _{Lo} 30,000 mg/m ³ /2 hour; Behavioral
MEK	78-93-3	EL6475000	Rat 2,737 mg/kg	Rabbit 6,480 mg/kg	Rat LD ₅₀ 23,500 mg/m ³ /8 hour

Carcinogenicity and Mutagenicity: No component in this mixture is classified as carcinogenic by ACGIH, NTP (US), or OSHA.

ECOLOGICAL INFORMATION

The ecological profile of this mixture is not available. Do not dispose of this chemical directly into the environment.

DISPOSAL CONSIDERATION

This chemical mixture must be disposed as per local and federal laws.

TRANSPORT INFORMATION

Proper Shipping Name: Polyurethane Copolymer

Hazard Label: Flammable liquid

UN Number: UN 1139

Hazard Class: Class 3

Packing Group: Group 2

REGULATORY INFORMATION

	Polyurethane		Acetone		MEK	
	Status	Threshold	Status	Threshold	Status	Threshold
CAA Section 112 (r)	N		N		N	
CERCLA	N		Y	5000 lbs	Y	5000 lbs
EPCRA I Section 302 TPQ	N		N	N	N	
EPCRA Section 313	N		N		Y	
RCRA Chemical Code			U002		U159	
Hazardous Air Pollutant	N		N		Y	

OTHER INFORMATION

Information contained in this MSDS is believed to be correct but no representation, guarantee, or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. This MSDS shall be used as a guide only. Pratl Technologies makes no warranties expressed or implied of the adequacy of this document for any particular purpose.