

# DRY CLEANING SOLVENTS

The Wisconsin Department of Natural Resources encourages dry cleaning business owners to remain up to date on technology, research, publications & trends in order to maintain a competitive & profitable dry cleaning business. When purchasing new machinery with a lifetime upwards of 20 years, it is essential to look beyond the industry's current conditions to consider where it may be by the end of the machinery's lifetime. In the same regards, researching & considering alternative cleaning solvents is an investment in the sustainability & future of your business.

**85%** of U.S. dry cleaners currently use perc as their method of garment cleaning. However, perc regulation is on the rise & various states are debating legislation to phase out its use. Joni Canterbury, Colorado's Small Business Assistance Program coordinator has noted that while still widely used, perc's future will be a rocky road. Furthermore, Jon Meijer of the Dry Cleaning & Laundry Institute, adds, "when you need to replace your equipment, consider the alternatives. [The DLI] would be remiss if we said to buy new perc machines".

## PERCHLORETHYLENE

perc, tetrachloroethylene

- the most commonly used method by U.S. dry cleaners
- demand has declined due to risks & public perception.

**RISKS:** carcinogenic, environmental toxin, various health effects

**REGULATIONS:** hazardous air pollutant, hazardous waste handling & disposal, information maintenance, compliance reports, machine restrictions, exhaust controls.

**MACHINERY COST:** \$53,800

## HYDROCARBON SOLVENTS

DF-2000, EcoSoly, Shell Sol, Pure Dry

- the most common substitute
- RISKS:** smog formation, various health effects, flammability hazards

**REGULATIONS:** Class IIIA Combustible Solvent

**MACHINERY COST:** \$72,300

## LIQUID SILICONE

decamethylclopentasiloxane, D5, GreenEarth

- toxicity is uncertain & debated

**RISKS:** potential carcinogen

**REGULATIONS:** Class IIIA Combustible Solvent

**MACHINERY COST:** \$72,300

## LIQUID CARBON DIOXIDE

- CO2 converts to a liquid under high pressure, acting as a carrier of soap the way water does in a washing machine
- most of the CO2 can be reused
- clothes dry instantly, are cool to the touch, & have no odor.

**RISKS:** none

**REGULATIONS:** none

**EPA POSTION:** approved alternative dry cleaning method

**MACHINERY COST:** \$191,800

## WET CLEANING

- utilizes specialized washers & dryers to control revolutions, temperature, & moisture
- Detergents can be odorless, low-toxic & biodegradable
- eliminates damage & shrink risk associated with home washers
- cleans any garment washed with typical dry clean methods

**RISKS:** none

**REGULATIONS:** none

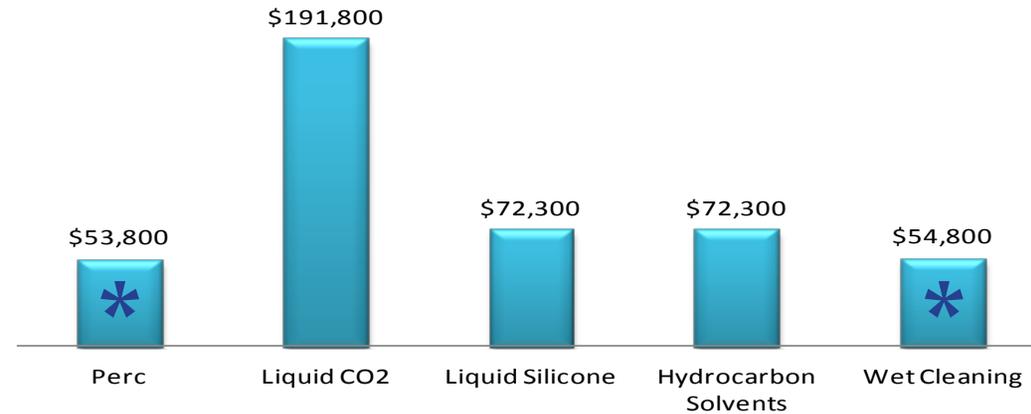
**EPA POSTION:** approved alternative dry cleaning method

**MACHINERY COST:** \$54,800





## Machine Cost & Installation



## Regulations & Legal Requirements

	Perc	Liquid Silicone	Hydrocarbon Solvents	Liquid CO2	Wet Cleaning
Solvent Delivery	•				
Spill Containment Systems	•				
Emergency Spill & Leak Plan	•				
Leak Inspection Log	•				
Solvent Disposal	•	•			
Record Solvent Consumption	•				
Dryer Exhaust Controls	•				
Machine Restrictions	•				
Compliance Status Report	•				
Hazardous Waste Handling & Disposal	•		•		
Ozone & Volatile Organic Compound Air Emissions			•		
Clean Air Act Hazardous Air Pollutant (HAP)	•				
Solvent Storage	•	•	•		
Storage Room		•	•		
Fire Control Device		•	•		
Licensing Fee		•			

## Capital & Operating Costs

	Electricity (kWh/100lb)	Natural Gas (therms/100lb)	Water (gal/100lb)
Perc	26.6	12.0	181.0
Liquid CO2	30.9	13.4	16.0
Liquid Silicone	54.2	13.4	51.0
Hydrocarbon Solvents	35.5	13.1	18.0
Wet Cleaning	9.3	9.0	87.0

Wet Cleaning utilizes over **65%** less electricity & is the most cost competitive alternative to perc machinery

Liquid Carbon Dioxide goes through **90%** less water

For more information, visit the DNR's industry assistance page:  
<http://dnr.wi.gov/SmallBusiness/>

Or call the Small Business Environmental Assistance Program hotline:  
**855.899.3021**

