

# New Requirements for Leak Detectors and Monitoring Equipment for Perchloroethylene Drycleaning Facilities in Colorado Effective July 28, 2008



## New Requirements

**All** Perchloroethylene (Perc) dry cleaners must now use a Halogenated Hydrocarbon Detector (HHD) or a Perc gas analyzer to conduct monthly leak inspections. Weekly or biweekly leak inspections are still required but at least once a month, you must use an instrument to do your leak inspections. Dry cleaners may use any brand of HHD for the monthly monitoring provided they can demonstrate it meets the requirements of the new rule e.g., “a portable device capable of detecting vapor concentrations of Perc of 25 parts per million by volume (ppmv) and indicating a concentration of 25 ppmv or greater by emitting an audible or visual signal that varies as the concentration changes.” EPA and it’s affiliates have compiled a list of HHDs they believe will meet the requirements of the rule. The list is included in this document and is available on the web at [www.cdphe.state.co.us/ap/stationarylibrary.html](http://www.cdphe.state.co.us/ap/stationarylibrary.html).

Facilities are required to repair vapor leaks detected within 24 hours unless parts must be ordered. If parts must be ordered, you must repair vapor leaks within 5 days of receiving the part(s).

## What to Inspect

Every week, **while the dry cleaning system is operating**, the trained operator must inspect all of the following components (Table 1) for perceptible liquid and vapor leaks and for proper operation and record the results in your Dry Cleaning Environmental Compliance Calendar.

## Typical areas to inspect for leaks on a Perc machine:

**TABLE 1**

hose and pipe connections	water separators	hazardous waste containers
pumps and valves	Stills	buttons and lint traps
door gaskets	solvent tanks	cartridge housings
filter gaskets		

*Note: Please refer to your Dry Cleaning Environmental Compliance Calendar for more information on your leak inspection requirements.*

## Halogenated Leak Detector Options

The halogenated leak detectors listed in Table 2 of this document are expected to meet EPA guidelines. This is not an endorsement. Please note that this is not an extensive list. Further research is recommended to find the best leak detector for your dry cleaning facility. Refer to the **Resource Guide** in the **Colorado Perc Dry Cleaner Environmental Compliance Calendar** at [www.cdphe.state.co.us/ap/sbap/index.html](http://www.cdphe.state.co.us/ap/sbap/index.html) for more information on suppliers for halogenated leak detectors and other monitoring equipment.

**TABLE 2**

**Halogenated Leak Detectors (Price Range \$119 to \$580)**

	<b>Manufacturer</b>	<b>Model #</b>	<b>Type</b>	<b>Sensitivity</b>	<b>Resources</b>
	Snap-On Inc	ACT 730 Leak Detector Three levels of sensitivity (5 levels of detection)	Halogen selective	< 0.25 oz/yr (<25 ppm)	Snap-on Equipment 1-800-225-5786 Clay.Cook@snapon.com <a href="http://buy1.snapon.com">http://buy1.snapon.com</a>
	Inficon Inc	Tek-Mate	Heated diode Halogen selective	< 0.4 oz/yr (< 25 ppm)	Nu-Way Products Co. Phillip Farmer 1-800-462-2089 <a href="http://www.inficonrefrigerantleakdetectors.com">www.inficonrefrigerantleakdetectors.com</a>
		The Compass	Halogen selective	< 25 ppm	Nu-Way Products Co. Phillip Farmer 1-800-462-2089 <a href="http://www.inficonrefrigerantleakdetectors.com">www.inficonrefrigerantleakdetectors.com</a>
	Aeroqual Semiconductor	Aeroqual 200 Leak detector (Perchloroethylene)	Solvent specific	0-200 PPM	Kanomax USA, INC 1-800-247-8887 <a href="http://kanomax-usa.com/Aeroqual-Series-200.html">http://kanomax-usa.com/Aeroqual-Series-200.html</a>
	TIF	TIFXP-1A Six tricolor LEDs for visual leak indication, seven sensitivity levels	Halogen selective	< 0.1 oz/yr (< 25 ppm)	Katzson Brothers, Inc. <a href="http://www.katzson.com">www.katzson.com</a> 1-800-332-2417 Grainger Industrial Supplies <a href="http://www.grainger.com">www.grainger.com</a>
		TIFRX-1A Six single color LEDs for visual leak indication, two sensitivity levels	Halogen selective	< 0.25 oz/yr (<25 ppm)	TIF <a href="http://www.tif.com">www.tif.com</a> 1-800-327-5060 Cleaner's Supply 1-800-388-5410 <a href="http://www.cleanersupply.com">www.cleanersupply.com</a>
		TIFXL-1A One sensitivity level	Non-selective	< 0.4 oz/yr (<25 ppm)	REIS Environmental <a href="http://www.wisesafetyenv.com">www.wisesafetyenv.com</a> (800) 677-7347 Essential Safety Products (ESP) <a href="http://www.essentialsafety.com">www.essentialsafety.com</a> (303) 286-7135
		TIF 8800A	Halogen selective	5 ppm	Lab Safety Supply <a href="http://www.lss.com">www.lss.com</a> 1-800-356-0783 Tequipment.Net <a href="http://www.tequipment.net">www.tequipment.net</a> 1-877-742-8578
		Nova Systems Products	BOLO Green	Solvent specific	5 ppm

## Terms from Table 2:

- Oz(s)/yr = ounces per year - unit for measuring the rate of the gas flow from a machine leak.  
Note: 0.5 oz/yr = ~10 to 15 ppm according to manufacturers.
- ppm = Parts per million. PPM is a measure of concentration of one part per million parts.
- Non-selective will not distinguish a Perc (a halogen) leak from other non-halogenated hydrocarbon gases.
- Halogen selective will measure only the halogen gases (chlorine) and the refrigerant in the refrigerated condenser (chlorine and fluorine).
- Solvent specific is only capable of measuring the flow of the solvent for which it was standardized to detect.
- *The California Air Resources Board, U.S. EPA, the Tennessee Small Business Environmental Assistance Program and leak detector manufacturers contributed to the HHD list above.*

## Tips for Operating a “Typical” Halogenated Leak Detector:

- **Figure out how it is calibrated. Most require fresh air prior to testing for leaks.** Therefore, you must switch the instrument “ON” outside of your shop or the instrument, when switched to ON, will re-set to zero no matter the concentration of Perc surrounding it. For example, when the detector is switched on near a leak of 100 parts per million (ppm), the detector will re-set its zero point to 100 ppm and will not detect any leaks smaller than 100 ppm. Never begin your leak detection by switching the instrument on while standing next to your dry cleaning machine.
- **To function properly, the tip of the detector should be placed within one to two inches of the area being checked and moved slowly back and forth before**

moving on to the next area. Most HHDs do not have a pump that sucks air into the detector and Perc must diffuse into the tip of the instrument to be detected.

- **If the detector “beeps rapidly”, you may have a leak.** Go back to where the “beeps” were first detected. Your goal is to find the specific spot where the detector reliably beeps to help you identify the exact location of the leak.
- **Check for leaks when they are most likely to occur.** Check for leaks during the drying cycle since the dry cleaning machine is operating under pressure due to the clothes being heated to recover Perc in addition to Perc vapors circulating through various pipes and filters. Check for leaks around the distillation unit while it is running. It is unlikely that you will find leaks during the wash cycle since Perc liquid is being agitated in the drum and the condenser is not running.
- **Use the leak detector to locate a leak.** After you have found the possible location of a leak, pick a spot near your machine, turn off the detector and then switch it back on. The detector is now “re-set” and is detecting for example, 40 ppm as zero. Now, the detector will not “rapidly beep” until it sees about 60 ppm. You would repeat this process until you are able to trace the leak to a particular source.
- **If a leak is detected, it must be noted on the weekly leak inspection log in your Dry Cleaning Compliance Calendar and repaired immediately if at all possible.**

If you have questions, please contact the Small Business Assistance Program at the Colorado Department of Public Health and Environment at (303) 692-3175 or 3148 or visit our website at [www.cdphe.state.co.us/ap/sbap/index.html](http://www.cdphe.state.co.us/ap/sbap/index.html).