



## Information Release

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# New York DEC Rules for Solvent Cleaning Processes 6 NYCRR Part 226 - FAQ



**Approved for Release to:** All Mirachem Customers, sales agents, distributors, and team members

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In late 2019, the New York Department of Environmental Conservation (DEC) revised its regulations under 6 NYCRR Part 226 for “Solvent Metal Cold Cleaning Processes” and “Industrial Cleaning Solvents.” The new regulations apply to cleaning processes that use solvents and equipment (such as sinks or rinsing machines) for both metal and non-metal parts.

Mirachem, and its environmental services partner Heritage-Crystal Clean, have prepared this list of Frequently Asked Questions to help New York businesses understand and implement the new standards required by NYCRR Parts 226-1 and 226-2.

For general information about air pollution control regulations and how they impact industrial cleaning applications, Mirachem recommends consulting our information release [Industrial Cleaning and Air Quality Regulatory Compliance - FAQ](#).

### **Q: *What happened?***

**A:** The New York Department of Environmental Conservation (NYSDEC) has revised its air quality rules under 6 NYCRR Part 226 'Solvent Metal Cleaning Processes'. These rules have been revised to establish a low Volatile Organic Compound (VOC) limit on certain cleaning product usage and established other requirements concerning the use of cleaning products and processes that emit VOC's. <sup>1</sup>

### **Q: *What's new in the updated regulations?***

**A:** Part 226 has been split into two subparts, 226-1 “Solvent Cleaning Processes”, and 226-2 “Industrial Cleaning Solvents”. These sections make two primary changes to the requirements.

1. Subpart 226-1, “Solvent Cleaning Processes”, expands the existing Part 226 rule to include multiple substrate materials. Previously, Part 226 only applied to the cleaning of “metal”. The updated rule is not solely applicable to items made of these materials.
2. Subpart 226-2, “Industrial Cleaning Solvents”, establishes control requirements for operations that have a 12-month rolling average of VOC emissions of three (3) tons or more. <sup>2</sup>

**Q: Why is this rule being implemented now?**

**A:** While we can't speak to the specifics of why the State of New York implemented these rules when it did, all jurisdictions make their rule changes for the same general reason, to improve air quality. But there's more to the overall conversation.

Some people would say that these regulations are necessary and long overdue because the environment is at risk and humans must act now to save it. Others object to that point of view, arguing that there is already too much government regulation and these laws are just a way of making money off businesses. Whatever your point of view, there's little doubt that environmental responsibility is a topic that isn't going away.

Practically speaking, however, if you look past the headlines, more pollution control regulations are being put in place these days because it makes financial sense to do so. To put it another way, the costs associated with a new rule are, over the long term, now less expensive than leaving things as they are. For example:

1. Advances in technology are making it possible to replace older manufacturing processes that generate more pollution. New equipment may be expensive to purchase, but it's also more efficient to operate and ultimately generates a cost savings.
2. Modern medical science has identified links between pollution and illness. Reducing pollution can help reduce healthcare costs.
3. Manufacturing processes designed for environmental responsibility use fewer resources. That's less raw materials, power, and waste disposal that companies have to pay for.
4. Hazardous materials used in cleaning processes are expensive to purchase, handle, store and dispose of. Switching to a safer, compliant product can reduce the cost of transportation, training, worker safety, storage, waste management, and compliance recordkeeping.

Of course, this isn't to say that change comes easily or without cost. Being forced to adapt processes is disruptive and a need to purchase new equipment creates expense. It's always wise, however, to look at the bigger picture when evaluating overall impact. If you have to make changes to your processes, take a closer look for ways of making them more productive and less expensive overall.

**Q: What are VOC's and why are they such a big deal?**

**A:** According to the US Environmental Protection Agency (EPA):

*Volatile organic compounds are compounds that have a high vapor pressure and low water solubility. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, pharmaceuticals, and refrigerants. VOCs typically are industrial solvents, such as trichloroethylene; fuel oxygenates, such as methyl tert-butyl ether (MTBE); or by-products produced by chlorination in water treatment, such as chloroform. VOCs are often components of petroleum fuels, hydraulic fluids, paint thinners, and dry cleaning agents. VOCs are common ground-water contaminants.*<sup>3</sup>

That's a very scientific way of defining VOC's. An easier way to think about these materials is that they are substances that combine with other materials in the air to create smog. It's an important topic right now because by reducing VOC's, we reduce smog and improve air quality.

If you'd like to learn more about air quality laws and how they relate to industrial cleaning in general, we suggest reading our information release **Industrial Cleaning and Air Quality Regulatory Compliance - FAQ**.

**Q: *What is a VOC content standard?***

**A:** A VOC content standard is typically part of a regulation that specifies a VOC amount and a report, action, restriction, or exemption that is applicable at that level.

In some cases, the VOC standard has to do with keeping track of the materials used and completing a report on how much VOC was generated as a result. This can be a time consuming and expensive task. Avoiding the effort and cost of this type of reporting requirement is often a significant consideration in prompting businesses to adopt safer practices.

It is also increasingly common for rules to identify pre-approved or exempt materials that may be used with reduced or no regulation. An example of this is California's South Coast Air Quality Management District's (SCAQMD) Clean Air Solvent Certification program.<sup>4</sup>

Other types of regulations, including the new mandates from NYSDEC, require that only products with a low VOC content be used in specified applications. Section 226-1.4(a)(4) specifies one of the required control measures to be, "*Cleaning solution with a maximum VOC content of 25 grams per liter at 20°C ... may be used to demonstrate compliance with this subdivision.*"<sup>5</sup> This means that applications covered by the regulation and not otherwise exempted are required to use a cleaning product with a VOC content of no more than 25 g/L as a means of limiting VOC emissions.

**Q: *I'm confused! If the regulations don't let me use solvents, why are they talking about solvent cleaning?***

**A:** That's a great question and an area of confusion with many air quality rules.

Within the parts cleaning industry, there is a distinction drawn between cleaning with petrochemical solvents, such as traditional stoddard solvent or trichlorethylene, and cleaning with water-based chemistries. However, regulators often refer to all cleaning solutions as "solvent", regardless of whether the products are hydrocarbon or aqueous in origin. So when a rule discusses "cleaning solvent" you can usually assume that it means any cleaning product that you might use in a parts cleaning application.

It might help to think of things this way:

1. Most air quality rules don't specifically prohibit or mandate the use of any particular cleaning product. The rules probably won't come out and say that hydrocarbon solvents are illegal, but may very well specify a VOC limit that is virtually impossible to meet with a chlorinated solvent.
2. To meet the required VOC limits, it will probably be necessary to use a water-based product. So practically speaking, the laws largely have the effect of eliminating "solvents" in favor of "aqueous" products.

3. Regardless of the practical impact in the marketplace, the regulators have to be careful what words they use in drafting rules. So, it's easier to use generic words that, in many cases, are used in other rules. And for cleaning products, that word of convenience is "solvent".

6 NYCCR Part 226 does not provide an exact definition of "solvent". Section 226.3(4) references "*Cleaning solution with a maximum VOC content of 25 grams per liter at 20°C; prior to December 1, 2020, ... at 20°C may be used to demonstrate compliance with this subdivision.*"<sup>5</sup>, but again, does not define "cleaning solution".

In the absence of additional guidance from New York authorities, it's reasonable to conclude that the term "solvent" is intended to mean any cleaning product used in an application covered by the rules.

**Q: Degreaser, solvent, cleaner ... don't these words all mean the same thing?**

**A:** Yes and no.

When it comes to industrial cleaning applications and parts washing, words like "solvent", "cleaner", and "degreaser" are often used interchangeably to refer to the liquid material used to help remove soils from surfaces. In this sense, all of those words mean the same thing.

Technically speaking, many people will distinguish between water-based technologies, usually referred to as aqueous products, and petroleum distillates, generally referred to as solvents. Both of these types of chemistries are used to remove soils from surfaces. But how they work are very different and the safety considerations between them can be significant.

Legally speaking, regulators often use specific definitions of these words that have a different regulatory meaning than what is heard in everyday use. New York's new Part 226 Solvent Cleaning Processes and Industrial Cleaning Solvents regulations use the following definitions<sup>3</sup>:

1. **Degreaser** - *Section 226-1.1 (3)*: Any solvent cleaning machine used to perform cold cleaning degreasing, remote reservoir degreasing, conveyORIZED degreasing, or open top vapor degreasing.
2. **Solvent Cleaning** - *Section 226-1.1 (8)*: Process of cleaning soils from surfaces by using a volatile organic compound (VOC).
3. **Cleaner**: No definition.

Based on these definitions, it's reasonable to infer that:

1. "Degreaser" refers to parts cleaning equipment.
2. "Solvent" is generic to any chemistry used to clean surfaces in parts washing equipment; there is no distinction between types of chemistry.
3. "Cleaner" is not a word that has special meaning under the regulations.

It is worth noting that there is some ambiguity in the New York regulations with respect to distinguishing between vapor degreasing equipment and “cold cleaning” parts washers. While *Section 226-1.1 (3)* seems to define all types of parts cleaning equipment as a “degreaser”, *Section 226-2.1* seems to draw a distinction between “*cold cleaning degreasers (including remote reservoir degreasers)*” and “*open-top vapor degreasing and conveyORIZED degreasers*”, and *Section 226-1.4(3)* identifies a control exemption for “*Remote reservoir degreasers*”. However, *Section 226-1.4(4)* contains an exemption statement for “*degreasers*” that meet one of the criteria in *226-1.4(4)(i)*, *226-1.4(4)(ii)*, or *226-1.4(4)(iii)*. In the absence of additional guidance from New York authorities, it’s probably reasonable to conclude that the term “degreaser” should be interpreted to mean any type of parts cleaning equipment.

Practically speaking, to understand your applications and evaluate your options, Mirachem suggests that you keep the following in mind regarding how these words are used in day-to-day industry practice:

1. “Degreasing” generally refers to the process of removing mid- to heavy-duty oil and grease from surfaces, most often in maintenance or remanufacturing operations. “Degreasers” are products intended to be used in these more demanding applications.
2. “Solvent” usually refers to traditional petroleum distillates used in parts cleaning, including mineral spirits, trichlorethylene, perchlorethylene, flash solvent, and Stoddard Solvent. Aqueous, or water-based, products are often generically referred to as “detergents” or “soaps”.
3. “Cleaning” refers to any process of removing soils from surfaces. “Cleaners” is the generic term used for any liquid material used in this process, though it is more often used in to reference water-based products, with “solvent” being more commonly used to describe petroleum-based chemistries.

**Q: What cleaning processes are covered by these rules?**

**A:** Section 226-1.1 ‘Applicability’ establishes that the rule applies to:

1. *Cold Cleaners, including remote reservoir cold cleaning machines*
2. *Open-Top Vapor Degreasers*
3. *All types of ConveyORIZED Degreasers*

*“that carry out solvent cleaning processes of metal objects using a solution containing volatile organic compounds (VOCs). After December 1, 2020, this Subpart also applies to cleaning of non-metal objects.”*<sup>5</sup>

**Q: What is ‘Cold Cleaning’?**

**A:** Historically, “cold cleaning” referred to sink-on-a-drum style parts cleaning equipment that used hydrocarbon solvents. The term was used to distinguish between heated vapor degreasing applications and non-heated manual parts washing tasks.

With many jurisdictions, including the State of New York, now enforcing low VOC limits on “cold cleaning” applications, these industrial cleaning applications are frequently converted from using petrochemical solvents to water-based cleaners, which are typically used in heated parts washers. However, most regulations do not take note of this fact and still use the term “cold cleaning” to refer to sink-on-a-drum style manual parts cleaning tasks.

According to Section 226-1.2(b)(1), 'Cold cleaning degreasing' is defined as *"Batch process of solvent cleaning, with liquid solvent, by spraying, brushing, flushing or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition."*<sup>5</sup>

**Q: A 'Remote Reservoir Cold Cleaning Machine' ?**

**A:** To be sure, this is not a term commonly used in industry.

The new regulation explains 'Remote Reservoir Degreasing' in Section 226-1.2(b)(7) as *"Cold cleaning degreasing performed in a device in which liquid solvent is pumped to a sink like work area, where the parts are cleaned, and then drains back into an enclosed container allowing no solvent to pool in the work area."*<sup>5</sup> That's a "legalese" way of describing what most people know as a "sink-on-a-drum"-style manual parts washer. It pumps cleaning fluid up from a reservoir, through a spout or hose assembly, into a work area (sink), from which the product then drains back down into the bottom of the unit.

These types of parts washers are singled out in the rules because they are much better at controlling VOC emissions than other types of parts cleaning equipment. Because the product mostly stays in an enclosed space and doesn't provide much of an air/fluid interface from which VOC's can escape into the atmosphere, these units are subjected to less regulation under the rules.

Soak-type units and parts cleaners that don't have separate reservoirs and work areas typically have a larger surface area of product in contact with the air. This provides for increased capacity for VOC emissions. These types of units are often subjected to increased scrutiny under air quality regulations, usually as a function of a calculation called "freeboard ratio".

**Q: Help me understand 'Freeboard'?**

**A:** 'Freeboard' is a word that usually refers to the distance between a waterline and a deck or structure somewhere above that waterline. When talking about freeboard in relation to parts washers, it generally means the distance from the fluid level in a parts cleaning machine to the top of the sink or reservoir, often the level where a lid closes the unit.

Freeboard becomes important in air quality regulation because it's a way of capturing measurements that can be used to evaluate potential VOC emissions from a parts cleaner. This evaluation is usually a function of measuring things like height and width of reservoirs, and performing calculations to find important numbers. For example, the US EPA establishes definitions of "Freeboard area", "Freeboard height", and "Freeboard ratio" in *40 CFR § 63.461 - Definitions*.<sup>6</sup>

In simple terms, the greater the freeboard space in a parts washer, the greater the amount of vapor that can accumulate in that space, and the greater the amount of VOC's that might be released into the atmosphere. An example of parts cleaners with less freeboard space would be manual sink-on-a-drum-type washers, 'Remote Reservoir Cold Cleaning Machines' under the New York law. Examples of equipment that probably have greater freeboard space include larger agitating washers or dip tanks.

These freeboard calculations are often referenced in air pollution laws to establish restrictions on the use of certain types of equipment or to specify reporting or usage requirements on units with more freeboard space. For example, in the case of 6 NYCRR 226, 'Freeboard height' (*Section 226-1.2(b)(4)*) and 'Freeboard ratio' (*Section 226-1.2(b)(4)*) are used

to determine Equipment Specifications and Control Requirement per Section 226-1.4(a)(3) for cold cleaning and open-top vapor degreasing equipment.

**Q: What's an 'Open-Top Vapor Degreaser' ?**

**A:** Wikipedia defines "vapor degreasing" as "...a surface finishing process. It involves solvents in vapor form to cleanse the workpiece in preparation for further finishing operations." <sup>7</sup> A vapor degreaser is a type of parts cleaning equipment that boils a cleaning solvent, typically a chlorinated hydrocarbon, to generate vapor that envelops parts to be cleaned. The vapor condenses on the cooler part, forming solvent liquid which drips down the workpiece and carries the solvent and suspended soil off the part.

"Open -top" describes a vapor degreaser that is open to the air. Other vapor degreaser designs are described as "closed-top", and have a physical enclosure. Some units also include systems to reclaim used solvent and/or capture escaping vapor.

The New York regulation defines 'Open-Top Vapor Degreasing' in 226-1.2(b) (1) as the "Process of solvent cleaning by condensing hot solvent vapor on the colder parts." <sup>5</sup>

**Q: Can you explain 'Conveyorized Degreaser' ?**

**A:** 6 NYCRR 226-1.2(b)(2) states:

*'Conveyorized degreasing.' Continuous process of solvent cleaning by operating with either cold or vaporized solvents.* <sup>5</sup>

This definition covers a wide range of equipment and processes that are more commonly described as a type of "critical cleaning" or "process cleaning" application. Usually associated with manufacturing and repair/refurbishment operations, critical or process cleaning applications are a necessary part of the business' core function; they can't do what they do without these cleaning tasks being successfully completed.

In high precision / high volume applications, it is not unusual to see advanced cleaning processes accomplished using automated, high-tech parts washing equipment. In some cases, these machines include multiple cleaning, rinsing, and drying stages, and parts move through these stages by way of a conveyor belt or chain-drive system.

**Q: So, if I'm not using a cold cleaner, an open-top vapor degreaser, or a conveyorized degreaser, this regulation doesn't apply to me ?**

**A:** Not necessarily.

The new Subpart 226-2 'Industrial Cleaning Solvents' imposes VOC control requirements on:

*... the owner or operator of a facility which has actual emissions of three (3) tons or more of volatile organic compounds (VOCs) from industrial cleaning solvents, on a twelve-month rolling total basis. This Subpart specifically applies to the cleaning of foreign materials from surfaces of unit operations such as large and small manufactured components, parts, equipment, floors, tanks, and vessels. Emissions from all methods of cleaning, including by hand, will be considered toward the applicability criteria.* <sup>5</sup>

This seems to be something of a “catch all” rule, to ensure emission control measures are applied to most processes. It appears that Subpart 226-2 will address VOC emissions from cleaning processes when no specific regulations apply.

**Q: Are there any exemptions to these new rules?**

**A:** Yes.

Section 226-1.2(a) specifies that “*Hand Wipe cleaning is not included in Subpart 226-1*”. So hand cleaning is not covered by the Solvent Cleaning Process regulation 226-1. Bear in mind, however, that hand wipe applications are specifically identified as being regulated under Subpart 226-2 Industrial Cleaning Solvents.

There are several exceptions to Subpart 226-2 established in Section 226-2.1(c)(1) through 226-2.1(c)(7).

1. cleaning solvents in cold cleaning degreasers (including remote reservoir degreasers), open-top vapor degreasing and conveyorized degreasers subject to Subpart 226-1 - 226-2.1(c)(1)
2. cleaning items defined as 'special and extreme solvent cleaning' subject to Subpart 226-1 - 226-2.1(c)(1)
3. use of cleaning solvents in surface coating processes to clean spray guns subject to Subpart 228-1 - 226-2.1(c)(2)
4. use of cleaning solvents for surface preparation, clean-up and coating removal subject to Subpart 228-1, including items specified as not being subject to the rule in Subpart 228-1.1(b) - 226-2.1(c)(2)
5. use of cleaning solvents for surface preparation and clean-up of adhesives, sealants and primers subject to Subpart 228-2, including items exempt from the rule in Subpart 228-2.2 - 226-2.1(c)(3)
6. use of cleaning solvents for offset lithographic, flexographic, rotogravure, screen printing or letterpress printing processes subject to Part 234, including items specified as not being subject to the rule in Part 234.1(d); - 226-2.1(c)(4)
7. use of cleaning solvents used in Aircraft de-icing operations exempt from permitting under Subpart 201-3; - 226-2.1(c)(5)
8. cleaning solvents given an "A" rating by the Department or that are already subject to RACT and/or T-BACT subject to Part 212; - 226-2.1(c)(6)
9. the use of any cleaning solvent specified or regulated under any Federal or State statute or regulation which specifies a VOC limit or exemption.; - 226-2.1(c)(7)
10. the use of cleaning solvents to clean personal protection equipment, for personal hygiene such as hand sanitizers, to clean medical equipment, in research and development activities, and in janitorial supplies used for cleaning offices, bathrooms or other similar areas. - 226-2.1(c)(8)

The New York Codes, Rules and Regulations (NYCRR) also contains three other Subparts that cover other industrial cleaning applications. These activities would seem to be exempt from regulation under 226-1 and 226-2 since they are



controlled by other regulations:

- a. Subpart 228-1 Surface Coating Processes: 228-1.3(d)(3), & 228-1.3(d)(7) contains references to spray equipment cleaning
- b. Subpart 228-2 Commercial and Industrial Adhesives, Sealants and Primers: 228-2.4(b) discusses surfaces preparation and cleanup solvents
- c. Subpart Part 234 Graphic Arts: covers "cleaning materials" (cleaners used for cleaning a press, press parts, or to remove dried ink or coating from areas around the press)

Section 226-1.6 'Reasonably Available Control Technology' also seems to establish a partial exemption or less stringent compliance requirement:

*"Where it can be demonstrated that a solvent cleaning process cannot be controlled to comply with sections 226-1.3 [General Requirements], 226-1.4 [Equipment Specifications and Control Requirements] and 226-1.5 [Operating Requirements] of this Subpart for reasons of technological and economic infeasibility, the Department may accept a lesser degree of control upon submission of satisfactory evidence that the person engaging in solvent cleaning is applying reasonably available control technology (RACT) and has a plan to develop the technologies necessary to comply with the aforementioned sections."*

**Q: That list of exemptions is hard to understand. Can you simplify?**

**A:** We can't speak for the State of New York and how it will interpret the updated 6 NYCRR 226 rules. But based on our experience, Mirachem would summarize the exemptions and exceptions as follows.

For Subpart 226-1 Solvent Cleaning Processes:

1. Aerospace electronic parts (wiring harness, sensor, connectors) - 226-1.2(9)(i)
2. Cleaning parts used to manufacture high-concentration compressed gases or gas path components - 226-1.2(9)(ii) and 226-1.2(9)(iii)
3. Specially permitted applications where it can be shown that required controls are not feasible - 226-1.6
4. Conveyorized Degreasers with an air/vapor interface < 22 square feet - 226-1.7 (a)(1)
5. Open-Top Vapor Degreasers with an open top area < 11 square feet - 226-1.7 (a)(2)
6. Conveyorized and Open-Top vapor Degreasers that comply with the requirements of 40 CFR 63 Subpart T for very low emissions and recordkeeping of Halogenated Solvents - 226-1.7 (a)(3)

For Subpart 226-2 Industrial Cleaning Solvent, the following items do not count toward the three tons per year applicability threshold:

1. Cleaning solvents used in cold cleaning degreasers (including remote reservoir degreasers), open-top vapor degreasing and conveyorized degreasers - 226-2.1(c)(1)
2. Aerospace electronic parts (wiring harness, sensor, connectors) - 226-2.1(c)(1)
3. Cleaning parts used to manufacture high-concentration compressed gases or gas path components - 226-2.1(c)(1)
4. Cleaning paint and coatings spray guns, applications regulated by Subpart 228-1 - 226-2.1(c)(2)

5. Surfaces prep, clean-up, and removal of paints and coatings, including paints stripping and other applications regulated by Subpart 228-3 - 226-2.1(c)(2)
6. Surfaces prep, clean-up, and removal of adhesives, sealants & primers and other applications regulated by Subpart 228-2 - - 226-2.1(c)(3)
7. Cleaning of offset lithographic, flexographic, rotogravure, screen printing or letterpress and printing other applications regulated by Subpart 234 - 226-2.1(c)(4)
8. Aircraft de-icing applications regulated by Subpart 201-3 - 226-2.1(c)(5)
9. "A" rated cleaning products used in applications related to Part 212 toxic air pollutant processes and already subject to RACT and T-BACT standards - 226-2.1(c)(6)
10. PPE cleaning, personal hygiene, medical equipment cleaning, R&D applications, and janitorial usage - 226-2.1(c)(7)

**Q: How do I know if the rules DO apply to me?**

**A:** That's a great question. In most cases there's an easy answer. In a few situations things may not be quite so clear cut.

Section 226-1.1 of the regulation states:

*(a) Applicability. This Subpart applies to all owners or operators of facilities who operate cold cleaners (including remote reservoir cold cleaning machines), open-top vapor degreasers, and all types of conveyORIZED degreasers that carry out solvent cleaning processes of metal objects using a solution containing volatile organic compounds (VOCs). After December 1, 2020, this Subpart also applies to cleaning of non-metal objects.*<sup>5</sup>

This seems to cover a broad range of cleaning applications. In fact, this language probably applies to over 60% of the cleaning tasks performed in industry. This means that if you're using some type of manual or batch parts cleaning equipment to remove organic soils, your application is probably subject to the requirements of Subpart 226-1.

Subpart 226-2 is more focused on reducing VOC emissions across the board at facilities that generate large amounts of VOC's. Section 226-2.1 states:

*"This Subpart applies to the owner or operator of a facility which has actual emissions of three (3) tons or more of volatile organic compounds (VOCs) from industrial cleaning solvents, on a twelve-month rolling total basis. This Subpart specifically applies to the cleaning of foreign materials from surfaces of unit operations such as large and small manufactured components, parts, equipment, floors, tanks, and vessels. Emissions from all methods of cleaning, including by hand, will be considered toward the applicability criteria."*<sup>5</sup>

If you are a large quantity generator of VOC's originating from cleaning processes not covered by another regulation, the requirements of 226-2 probably apply.

In Mirachem's review of the updated rules, four areas were identified that we believe could use additional clarification from New York authorities:

1. Determining when Subpart 226 applies as opposed to other regulations. For example, if paint guns are cleaned using an aqueous product in a manual parts washer, is this application controlled by Subpart 226 or Subpart 228-1? Or, if adhesive residue is being removed using a paint stripping product in an agitating batch washer,

does Subpart 228-2 or Subpart 226 control?

2. Automated spray cleaning using front or top-load cabinet washers is not clearly identified as being regulated or not under Subpart 226 or another rule.
3. The use of aerosol carburetor or brake cleaners is not discussed in Subpart 226-2. Some jurisdictions have regulations about these products as a consumer commodity, others speak to their use as consumer products in industrial applications, and some do not address the product category at all. It is unclear how New York views these materials in relation to industrial parts cleaning.
4. New York's regulations include other provisions that cover applications similar or related to industrial parts cleaning:
  - a. Cleaning paint and coatings spray guns; regulated by Subpart 228-1
  - b. Surfaces prep, clean-up, and removal of paints and coatings, including paint stripping and other applications; regulated by Subpart 228-1
  - c. Cleaning solvents for offset lithographic, flexographic, rotogravure, screen printing or letterpress printing; regulated by Subpart 234

Our experience would suggest that because these processes are covered by specific rules, Subpart 226 would not apply. However, this remains unclear.

If you're not sure about how these regulations apply to your situation, you can always contact the New York Department of Environmental Conservation and ask for compliance assistance. The NYSDEC customer service telephone number is 800-678-6399 and a link to their Customer Service webpage is included below in the Related Resources section of this document.

A reputable environmental services firm, like Mirachem's partner Heritage-Crystal Clean, can also help you evaluate your applications. Visit Crystal Clean online at [Crystal-Clean.com](http://Crystal-Clean.com), or call 877-938-7948 for more information.

It's also worth considering that the best course of action may be to look to the future and start updating your processes regardless of how the regulations apply to you. Air quality and environmental protection laws are here to stay and they are only going to get more stringent. And once you start looking at your processes and the safer alternatives that exist, you can also evaluate opportunities to make your procedures more productive and cost efficient.

**Q: *What are the odds that these rules will go away in the future?***

**A:** Virtually zero.

Fifty years of air quality data shows that these laws do improve air quality. There's also more than two decades worth of practical experience to demonstrate that low VOC cleaning processes can get the job done. The genie, as they say, is now out of the bottle and it would be seen as irresponsible for regulators to reverse effective regulations.

**Q: *What do I have to do to meet my obligations under the law?***

**A:** You should review the regulations for yourself to determine how the requirements apply to your specific situation. But in general, Subpart 226 has five categories of compliance requirements:

1. General Requirements - 226-1.3
2. Equipment Specifications - 226-1.4
3. Control Requirements - 226-1.4 and 226-2.4(a)
4. Operating Requirements - 226-1.5
5. Record Keeping - 226-2.4(b)

To comply with the provisions of 226-1, we believe the necessary steps can be summarized as follows:

*Section 226-1.3 - General Requirements*

1. Store products in covered containers and dispose of waste to prevent evaporation - 226-1.3(a)
2. Maintain equipment to prevent leaks - 226-1.3(b)
3. Display proper operating instructions to minimize VOC emissions - 226-1.3(c)
4. Keep parts cleaning equipment covered and don't operate equipment without the covers - 226-1.3(d)
5. Keep track of cleaning product usage and keep the records for five (5) years - 226-1.3(e)
6. Don't use parts washing equipment to clean items made of absorbent materials - 226-1.3(f)
7. Keep records on suppliers and VOC content or vapor pressure of products used - 226-1.3(g)

*Section 226-1.4 - Equipment Specifications*

1. For Cold Cleaners - 226-1.4(a)
  - a. Parts cleaning equipment must have a cover - 226-1.4(a)(1)
  - b. Parts washers must drain to a reservoir - 226-1.4(a)(2)
  - c. If equipment does not have a remote reservoir, then a freeboard ratio requirement exists - 226-1.4(a)(3)
  - d. Cleaning products with a 25 g/L or less VOC content must be used - 226-1.4(a)(4)
    - i. Unless the equipment is used in special and extreme solvent cleaning, the NYSDEC has granted an exemption based on safety considerations, or equipment is located in a permanent enclosure that removes > 90% of VOC's - 226-1.4(a)(4)(i) - 226-1.4(a)(4)(iii)
  - e. In Printed Circuit Board (PCB) cleaning and related applications the VOC limit is 150 g/L or less - 226-1.4(a)(5)
2. For Open-Top Vapor Degreasers - 226-1.4(b)
  - a. Equipment must have a cover that can be used without disturbing the vapor - 226-1.4(b)(1)
  - b. Safety switches to turn off heat if a condenser malfunctions, and turn off the pump if vapor level drops excessively, must be in place - 226-1.4(b)(2)
  - c. Units must have one of the following - 226-1.4(b)(3)
    - i. Freeboard ratio meeting specifications, a refrigerated chiller, local exhaust or carbon capture system to collect VOC's - 226-1.4(b)(3)(i) - 226-1.4(b)(3)(iii)
3. For ConveyORIZED Degreasers - 226-1.4(c)
  - a. Units must have one of the following - 226-1.4(c)(1)
    - i. A refrigerated chiller, local exhaust or carbon capture system to collect VOC's - 226-1.4(b)(3)(i) - 226-1.4(b)(3)(iii)
  - b. Equipment must have a drying tunnel or other suitable unit to prevent VOC's from being carried out of the system - 226-1.4(c)(2)
  - c. Safety switches that shut down the system in the event of a malfunction - 226-1.4(c)(3)
  - d. Minimal opening at entrance and exit - 226-1.4(c)(4)

### *Section 226-1.5 - Operating Requirements*

1. For Cold Cleaners - 226-1.5(a)
  - a. Parts must be drained for at least 15 seconds or until dripping stops - 226-1.5(a)
2. For Open-Top Vapor Degreasers - 226-1.4(b)
  - a. Minimize product drag out - 226-1.5(b)(1)
    - i. Rack parts to allow drainage, move parts in and out of work area at a speed of less than 11 ft/minute, use a minimum cleaning time of 30 seconds or until vapor is fully condensed, tip out pooled product to prevent drag out, and dry parts for at least 15 seconds - 226-1.5(b)(1)(i) - 226-1.5(b)(1)(v)
  - b. Make sure work pieces don't take up more than 50% of the vapor area - 226-1.5(b)(2)
  - c. Spray only below the vapor level - 226-1.5(b)(3)
3. For ConveyORIZED Degreasers - 226-1.5(c)
  - a. Minimize ventilation to no more than 125% of what is required for worker safety - 226-1.5(c)(1)
  - b. Minimize drag out - 226-1.5(c)(2)
    - i. Use racking for proper drainage and maintain conveyor speed below 11 ft/min - 226-1.5(c)(2)(i) - 226-1.5(c)(2)(ii)
  - c. Ensure that no water is detected in solvent leaving the washer- 226-1.5(c)(3)

To comply with the provisions of 226-2, we believe the necessary steps can be summarized as follows:

### *Section 226-2.3 - Control Requirements*

1. Work Practices - 226-2.3(a)
  - a. Close containers and don't allow mops / rags to sit out, reduce air flow to minimize evaporation, properly dispose of cleaners and tools, and maintain equipment to prevent leaks - 226-2.3(a)(1) - 226-2.3(a)(4)
  - b. Implement at least one of the following control measures:
    - i. Use an industrial cleaning product with VOC content of 50 g/L or less for cleaning large and small manufactured components, parts, equipment, floors, tanks, and vessels - 226-2.3(b)
    - ii. Use an industrial cleaning product with a maximum vapor pressure of eight (8) millimeters of mercury (mmHg) at 20 degrees Celsius - 226-2.3(c)
    - iii. Control VOC emissions with a system of 85% or greater effectiveness - 226-2.3(d)
2. If 226-2.3 control requirements cannot be met due to proven technical or economic reasons, the NYSDEC may accept a lesser degree of control (Reasonably Available Control Technology - RACT) following proper review and permitting process - 226-2.4(a)

### *Section 226-2.4 - Record Keeping*

1. Keep records for five (5) years detailing quantity and type of industrial cleaning solvents used at the facility, and including a bill of sale, a certificate covering multiple sales, a material safety data sheet, or other documentation suitable for establishing compliance - 226-2.4(b)

**Q: I have a business to run and don't have time to deal with this. Can I just hire someone to be responsible?**

**A:** You can certainly hire or contract with compliance professionals to help chart your business' course through this change. But there's no way to shift the obligation elsewhere. If you have cleaning applications in your business covered

by 6 NYCRR Part 226, Solvent Cleaning Processes and Industrial Cleaning Solvents, then you will be responsible for compliance.

This doesn't mean that you have to go it alone.

Many companies include compliance information in their product support materials. For example, Mirachem publishes the VOC content of our products in Section 9 of the Safety Data Sheet (SDS), and has published our product release, [Mirachem Products and Air Quality Regulations](#), to provide guidance on using Mirachem technologies to comply with updated air pollution rules.

You can also get hands-on help without having to hire a dedicated compliance specialist. A reputable, full service environmental solutions company can help you evaluate your current processes and provide options to help you comply with the law. Your provider should also be able to help you find opportunities to increase productivity, reduce cost, and improve your environmental responsibility profile. Mirachem recommends our environmental services partner, Heritage-Crystal Clean.

**Q: *Can I really comply with regulations and still get the job done?***

**A:** In virtually all cases, the answer should be yes. Unless your application is both uncommon and significantly different from most industrial cleaning tasks you have little reason to be concerned.

The important thing to remember when adapting cleaning tasks to new regulations, especially if the change involves converting from a petrochemical solvent to a water-based products, is that there may be several parts of the process that have to change. And if you want to take advantage of the change process to boost productivity and overall cost savings, the evaluation process can take some time. We recommend consulting our information release [Switching To Aqueous Cleaning - FAQ](#). This resource can help you plan your evaluation and make your switch as painless as possible.

If you're also interested in parts cleaning equipment that can make your work more productive, turnkey service programs to help make maintenance easier, or professional waste disposal and environmental service support, you should also consider talking with Heritage-Crystal Clean. As Mirachem's environmental services partner, Crystal Clean can not only help you find the right product for your application, but also provide everything you need to get the most out of your cleaning process.

**Q: *Can water-based cleaners REALLY replace hydrocarbon solvents?***

**A:** Yes, they can, and they can do it in almost all cases.

Water-based cleaners started being looked at seriously for industrial cleaning in the late 1970's. These early aqueous chemistries usually offered inferior performance to Stoddard, mineral spirits, and other petrochemical solvents. Those environmentally friendly products were great, but they didn't work.

Aqueous parts washing has come a long way since then. Water-based cleaning is effective, and there's plenty of proof in the marketplace. In 1998, Southern California's South Coast Air Quality Management District (SCAQMD) implemented its Rule 1171 that mandated a VOC limit of 25 g/L, the same limit now established in New York State. Over 20 years later, Rule 1171 is still the law in Southern California because aqueous cleaning works.

Mirachem has been manufacturing our advanced aqueous technologies since 1978. For over 40 years, we've worked with businesses large and small to find water-based alternatives to cleaning processes that use hazardous chemistries. Water really can get the job done and we can help you see for yourself.

**Q: This is all very confusing. Where do I start?**

**A:** We suggest getting some expert support. And the good news is, it doesn't have to cost you a thing.

Mirachem has been in the business of providing safer alternatives for over 40 years. Our advanced aqueous technologies have been engineered from the ground up to be compliant with the latest air quality standards. But more than that, our experienced team of professionals understands that safer doesn't mean much if you can't get the job done. You can count on our full line of water-based products to perform in virtually any application. You can learn more at [Mirachem.com](http://Mirachem.com), or contact us at [Support@Mirachem.com](mailto:Support@Mirachem.com) or 800-847-3527.

While you're updating your processes, why not take a look at boosting productivity and performance to the next level? We can offer you much more than aqueous cleaning through our environmental service partner, Crystal Clean. State of the art parts cleaning equipment, complete service programs, waste disposal, and vacuum services are just some of the services available from Crystal Clean. You can also take advantage of highly trained experts that can help you evaluate your entire cleaning process to help find ways of saving you time and money. Visit Crystal Clean online at [Crystal-Clean.com](http://Crystal-Clean.com), or call 877-938-7948 for more information.

**Footnotes**

<p><b>1.</b> <i>New York State DEC:</i> Adopted Part 226, Solvent Cleaning Processes and Industrial Cleaning Solvents</p>	<p><a href="https://www.dec.ny.gov/regulations/116332.html">https://www.dec.ny.gov/regulations/116332.html</a></p>
<p><b>2.</b> <i>New York State DEC:</i> FACT SHEET Part 226 Updates - Pollution Prevention Tips</p>	<p><a href="https://www.dec.ny.gov/docs/materials_minerals_pdf/pt226airfactsht.pdf">https://www.dec.ny.gov/docs/materials_minerals_pdf/pt226airfactsht.pdf</a></p>
<p><b>3.</b> <i>US EPA:</i> What are volatile organic compounds (VOCs)?</p>	<p><a href="https://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs">https://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs</a></p>
<p><b>4.</b> <i>South Coast Air Quality Management District (SCAQMD):</i> Certified Clean Air Solvents</p>	<p><a href="http://www.aqmd.gov/home/programs/business/business-detail?title=certified-clean-air-solvents">http://www.aqmd.gov/home/programs/business/business-detail?title=certified-clean-air-solvents</a></p>
<p><b>5.</b> <i>New York State DEC:</i> Revised Express Terms 6 NYCRR Part 226 Solvent Cleaning Processes and Industrial Cleaning Solvents</p>	<p><a href="https://www.dec.ny.gov/regulations/116405.html">https://www.dec.ny.gov/regulations/116405.html</a></p>
<p><b>6.</b> <i>Cornell Law School - Electronic Code of Federal Regulations (e-CFR) :</i> 40 CFR § 63.461 - Definitions.</p>	<p><a href="https://www.law.cornell.edu/cfr/text/40/63.461">https://www.law.cornell.edu/cfr/text/40/63.461</a></p>
<p><b>7.</b> <i>Wikipedia:</i> Vapor degreasing</p>	<p><a href="https://en.wikipedia.org/wiki/Vapor_degreasing">https://en.wikipedia.org/wiki/Vapor_degreasing</a></p>

## Related Resources:

Industrial Cleaning and Air Quality Regulatory Compliance - FAQ (INF-1461)		<a href="http://Mirachem.info/INF-1461">Mirachem.info/INF-1461</a>
Switching To Aqueous Cleaning - FAQ - Information Release (INF-1113)		<a href="http://Mirachem.info/INF-1113">Mirachem.info/INF-1113</a>
Mirachem Products and Air Quality Regulations - Product Release (PR-1462)		<a href="http://Mirachem.info/PR-1462">Mirachem.info/PR-1462</a>
Mirachem Low VOC Products - Catalog Page		<a href="http://Mirachem.info/CAT-2883">Mirachem.info/CAT-2883</a>
Mirachem No VOC Products - Catalog Page		<a href="http://Mirachem.info/CAT-2884">Mirachem.info/CAT-2884</a>
Heritage-Crystal Clean website*		<a href="http://Crystal-Clean.com">Crystal-Clean.com</a>
Crystal Clean - Services - Support Resource (RR-2882)*		<a href="http://Mirachem.info/RR-2882">Mirachem.info/RR-2882</a>
Crystal Clean - Parts Washer Services - Support Resource (RR-2885)*		<a href="http://Mirachem.info/RR-2885">Mirachem.info/RR-2885</a>
NYSDEC - Customer Service Web Page - Support Resource (RR-2886)*		<a href="http://Mirachem.info/RR-2886">Mirachem.info/RR-2886</a>
NYSDEC - Adopted Part 226-Solvent Cleaning Processes and Industrial Cleaning Solvents - Support Resource (RR-2879)*		<a href="http://Mirachem.info/RR-2879">Mirachem.info/RR-2879</a>
NYSDEC - Part 226 Updates Fact Sheet - Support Resource (RR-2881)*		<a href="http://Mirachem.info/RR-2875">Mirachem.info/RR-2875</a>
US EPA - What are volatile organic compounds (VOCs) - Support Resource (RR-2877)*		<a href="http://Mirachem.info/RR-2877">Mirachem.info/RR-2877</a>
US NPS - Where Does Air Pollution Come From - Support Resource (RR-2878)*		<a href="http://Mirachem.info/RR-2878">Mirachem.info/RR-2878</a>
SCAQMD Certified Clean Air Solvents - Support Resource (RR-2875)*		<a href="http://Mirachem.info/RR-2875">Mirachem.info/RR-2875</a>
* External weblink		



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**About Mirachem, LLC**

*Mirachem, LLC, a Heritage-Crystal Clean company, is a manufacturer and marketer of environmentally and worker-safe cleaning technologies, and provides advanced customer and technical support for users in a variety of applications, across many industries and business segments. Headquartered in Phoenix, AZ, Mirachem was founded in 1978 as The Mirachem Corporation, and has been offering superior alternatives to traditional, hazardous cleaning chemistries for over 40 years. For more information, visit [Mirachem.com/AboutUs](https://www.mirachem.com/AboutUs).*

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