

# The Alternative

**IRTA Newsletter**

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## **Spray Gun and Line Cleanup Solvents Regulated by SCAQMD**

Materials used for cleaning up spray guns, lines, rollers and brushes used to apply coatings and adhesives of all kinds have been regulated by the South Coast Air Quality Management District (SCAQMD) for many years. The VOC limit for these cleanup solvents is specified in SCAQMD Rule 1171 "Solvent Cleaning Operations." In this rule, the VOC content limit for "Cleaning of Coatings or Adhesives Application Equipment" is 25 grams per liter. This limit must be met by paint and adhesives manufacturers, companies who are painting or using adhesives to make a product or by contractors who work in the field. The SCAQMD rule applies in Los Angeles, Orange, San Bernardino and Riverside counties where SCAQMD has jurisdiction. Some other air districts in the state also have similar VOC limits for cleanup solvents.

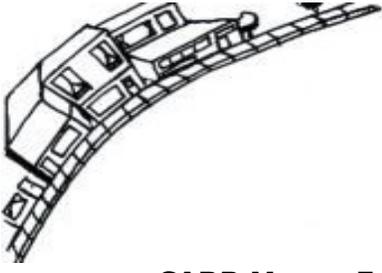
The problem with the VOC limit for application equipment is that many contractors who apply coatings of various types in the field are not aware that the rule limit actually applies to their activities. The coatings and other materials used by contractors at residential, commercial or industrial sites are regulated in another SCAQMD regulation, Rule 1113 "Architectural Coatings." There is no reference in Rule 1113 to the cleanup material VOC limit in Rule 1171. In all other SCAQMD coatings and adhesives rules, there is a statement that cleanup of application equipment is regulated in Rule 1171. Because contractors have not been complying with the Rule 1171 limits, the District plans to modify Rule 1113 to explicitly include this statement. SCAQMD staff held a Rule 1113 workshop on June 20 where they proposed the change.

Even though Rule 1113 does not include a statement about the VOC content of cleanup materials, they are currently regulated and have been for many years. It is the duty of contractors to be aware of the VOC limit. Contractors who are not complying with the rule could be cited by SCAQMD inspectors and they could receive significant fines ranging from \$10,000 to \$50,000 per day, depending on the circumstances. Contractors are being told by suppliers that they can use high VOC cleanup materials and this is not the case. If a District inspector issues a violation, the contractor will have the responsibility to pay the fine, not the supplier.



Several years ago, IRTA conducted a project that involved finding alternative cleanup materials. IRTA tested a variety of different cleaning agents and found alternatives that were suitable for coatings and adhesives that were being sold at the time. SCAQMD established the 25 gram per liter VOC limit based on IRTA's results. Waterborne coatings and adhesives can be cleaned up with water and water-based cleaners and solventborne coatings and adhesives can generally be cleaned up with chemicals that are exempt from VOC regulation or have very low VOC content.

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**Small Business Corner**

**CARB Moves Forward with Proposed Changes to Paint Thinner Regulation**

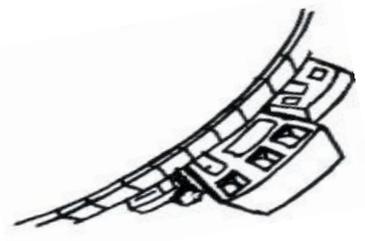
In 2010, the California Air Resources Board (CARB) adopted a regulation for Multi-Purpose Solvent and Paint Thinner products. The regulation established a VOC limit of 30 percent by December 31, 2010 and a much lower limit of 3 percent by December 31, 2013. The South Coast Air Quality Management District (SCAQMD) had adopted Rule 1143 "Consumer Paint Thinners & Multi-Purpose Solvents" in 2009. The SCAQMD regulation established a VOC limit of 300 grams per liter that was effective on January 1, 2010 and a limit of 25 grams per liter that was effective on January 1, 2011.

The reason CARB is proposing a modification to their regulation is that industry is using a loophole to avoid complying with the SCAQMD regulation. This loophole arises because CARB has a different definition for VOC than SCAQMD. CARB allows the use of Low Vapor Pressure (LVP) materials to comply with their regulation. Some of these LVP materials evaporate very quickly and are actually VOCs. By labeling the products in the South Coast Basin as CARB consumer products, many companies are simply selling odorless mineral spirits (OMS) throughout the state. The OMS does not comply with the SCAQMD regulation since it is actually a VOC. Because OMS has a very short evaporation time, it also should not be classified as an LVP in the CARB regulation.

The modifications CARB is proposing would eliminate the loophole in their regulation for the South Coast Basin. The loophole would not be eliminated until 2018 so suppliers could continue to sell VOC products until then. Since low VOC alternatives are feasible, it is not clear why CARB thinks the suppliers should have several more years to sell their unnecessary high VOC content OMS products. CARB's proposal does not eliminate the loophole for the rest of the state so the suppliers can continue to sell VOC solvent indefinitely there.

Over the last several months, the suppliers of these paint thinner products have begun selling a variety of high VOC solvents in aerosol form as multi-purpose solvents and paint thinners. Companies would not use the aerosol products to thin paints since it would not be practical to thin a paint by spraying an aerosol solvent into it. They would, however, use the aerosols widely as cleaning agents. These products currently have no VOC limit in the CARB regulation. CARB is proposing to establish a VOC limit of 10 percent for the aerosol products that would become effective on January 1, 2016. Since the CARB regulation allows the use of LVP materials, suppliers will simply sell high VOC content products in aerosol form until January 1, 2016; at that stage, they will begin selling aerosol products which contain OMS which is also actually a VOC. CARB is not proposing to establish a separate standard for the aerosol products in the South Coast Basin so high VOC content aerosols can be sold throughout the state indefinitely.

IRTA has made several visits to stores selling paint thinners and multi-purpose solvents in the Los Angeles area over the last several months. Many of the products on the shelves are high VOC content products including, but not limited to, OMS based materials. It is clear that CARB is not enforcing any of the limits of their regulation. Suppliers obviously believe that they can sell any VOC in this product category they want and there will be no consequences. *(continued on page 7)*



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Cleanup materials that are being used that do not comply with the VOC content limit include:

- Diesel fuel
- Gasoline
- Kerosene
- Odorless mineral spirits
- Petroleum solvent or mineral spirits
- Mineral oil
- MEK or MIBK
- Lacquer thinner
- Paint thinner
- Toluene
- Xylene
- Isopropyl alcohol (IPA)



Cleanup materials that meet the 25 gram per liter VOC limit and can be used for cleanup are:

- Water
- Some water-based cleaners
- Some soy based cleaners
- Acetone
- Parachlorobenzotrifluoride (PCBTF)
- Propylene carbonate

If contractors want more information on the requirements of the regulation, they can call Mike Morris at SCAQMD at (909) 396-3282. If contractors would like to discuss the regulation and would like advice on what alternatives to use for cleanup, they can call Katy Wolf at IRTA at (323) 656-1121.

## IRTA Testing Alternative Release Agents for Concrete Stamping

IRTA is conducting a project, sponsored by EPA and the South Coast Air Quality Management District (SCAQMD) to identify, develop, test and demonstrate alternative mold cleaners and mold release agents. Molds are used by many industrial companies to make parts made of various materials including fiberglass, composites of different types, a range of polymers, foam and concrete. Fiberglass parts, for instance, are molded to form boat bottoms and shower stalls. Polymers are often molded in compression molding machines to form trays and food products. Concrete parts are molded to form the support columns used at Ports. In all cases, these molding operations require companies to use a mold release agent so the parts do not stick to the mold and can be released easily.

Release agents are also used in concrete stamping and in concrete overlay stamping operations which are performed in the field at industrial, commercial and residential sites where concrete is poured. Concrete stamping involves using a firm polyurethane mat with a pattern carved into the mat bottom, to stamp the pattern into the concrete as it is curing. The pattern is often designed to make the concrete look like stone; designs of all kinds can be stamped. Color is often added to the pattern as well. A barrier material is applied to the bottom of the pad so it will not stick to the concrete below while it cures.

Concrete overlay operations involve pouring concrete containing an adhesive compound over existing surfaces. Again, mats can be used to stamp a pattern into the concrete overlay and the concrete overlay can be colored. The formulation for the concrete used in the overlay is stickier than the formulation used in pouring concrete since it contains an adhesive. A release agent, used to prevent the mat from sticking, is even more important in this application.



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## IRTA Testing Alternative Blasting Methods for Graffiti Removal

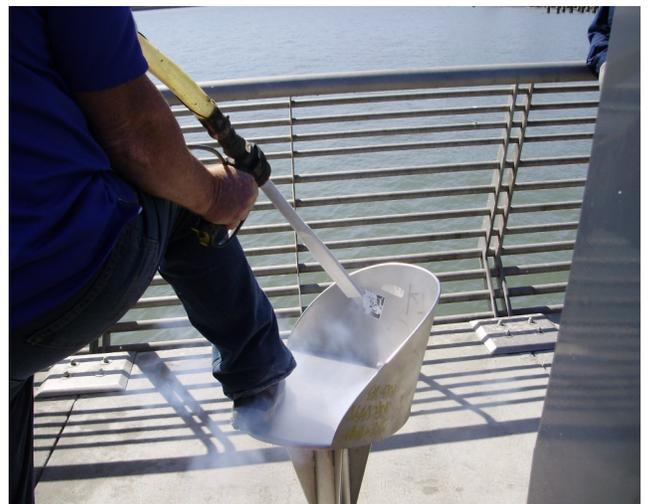
IRTA is currently conducting a project, sponsored by EPA, the Bay Area Air Quality Management District and the San Francisco Department of the Environment, to find safer alternative graffiti management methods. The project involves identifying, developing, testing and demonstrating alternative low-VOC low toxicity graffiti removers, testing alternative graffiti resistant paints and testing non-chemical alternative methods of graffiti removal. IRTA is working with several organizations to test the alternatives.

The technologies that were tested were the Cold Jet system which relies on dry ice to remove the graffiti from surfaces and an abrasive system that uses crushed recycled glass media. The advantage of the dry ice technology is that no secondary waste is generated since the dry ice sublimates or forms a gas. This carbon dioxide gas is not a threat to climate change since the carbon dioxide for the dry ice is taken from other sources that would otherwise be emitted. In effect, it is recycled carbon dioxide. *(continued on page 6)*

The Port of San Francisco is participating in the project. The Port has a severe graffiti problem on a range of different types of structures and parts on Port property. Currently the Port is using several different methods to manage the graffiti including painting over the graffiti, using clear glass polymers over billboards and relying on a range of different graffiti removers.

One of the options the Port and other project participants are interested in is blasting technologies. These technologies use media to remove the graffiti from surfaces of all kinds. Technologies that have been used traditionally include high pressure water spray and soda blasting which uses sodium bicarbonate media to blast the graffiti from surfaces. These two technologies generate a significant amount of secondary waste from the water and sodium bicarbonate used for the blasting.

IRTA has been investigating alternative blasting methods which generate less secondary waste and recently tested two of these technologies with the Port. The company offering the technologies is Cold Jet and they provided units for a demonstration and a half day of testing.



**Need help finding an alternative?  
IRTA assists firms in converting to suitable alternatives in cleaning, paint stripping, coating, thinning, dry cleaning and other applications.**

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The crushed recycled glass is combined with water and used as the media in a Farrow blasting system. The recycled glass apparently has no free silica which could pose inhalation problems for the system operators. Furthermore, because the media is combined with water, it is used in wet form which is less likely to pose a worker hazard. The wet crushed recycled glass abrades the graffiti from surfaces. IRTA has tested many abrasive blasting systems over the last 25 years and this system generates very little secondary hazardous waste compared with many other blasting technologies.



The two different systems can complement each other. The dry ice blasting system is less aggressive than the crushed recycled glass system. The systems can be used together to clean graffiti from a variety of surfaces including lamp posts, concrete walls and parts of various kinds, metal structures and parts and porous surfaces like granite

and stucco. In some cases, the systems can be paired with a graffiti remover which is used before the blasting to make the graffiti easier to use.

IRTA arranged a demonstration of the two systems with the Port and other organizations that are participating in the project and the project sponsors attended. IRTA also arranged for additional testing for the Port applications at a later date. This testing was conducted in late May and the Port personnel who would operate the systems had a chance to see how they work and to use them. Maintenance personnel from other participating organizations also attended this testing and were also able to operate the systems.



The systems performed well on metal powder coated substrates that are used as supports and for fabricated chairs on a dock on the Embarcadero that is owned and maintained by the Port. The crushed recycled glass system was very effective in removing old faded graffiti from concrete sidewalks. Other systems had not been able to remove this embedded graffiti.

The Port is considering renting the two systems for a few months to explore their applicability further for the applications they encounter. Cold Jet rents the systems and the cost of renting can count toward system purchase.

For more information on the blasting systems, contact Katy Wolf at IRTA at (323) 656-1121.

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IRTA is strongly opposing several provisions in the CARB regulation. CARB should not allow the continued use of OMS for any consumer product application since the material is clearly a VOC. CARB should amend the rule to eliminate the loophole not only in the South Coast Basin but statewide. It is not clear why the rest of the state should not have lower VOC emissions. CARB should also make the

regulation effective upon the date of adoption instead of waiting until 2018. CARB should regulate aerosol products throughout the state and the regulation should eliminate the use of OMS in those products statewide.

For information on the proposed regulation, call Katy Wolf at IRTA at (323) 656-1121.

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Historically, a powder has been used to form a barrier between the pad and the concrete while it is curing. The powder is very messy, is difficult to handle and can be inhaled by the workers. In recent years, contractors have started using liquid release agents as the barrier between the polyurethane mats and the concrete. The material used for this purpose is odorless mineral spirits (OMS) which is a VOC. Most contractors who conduct concrete stamping or concrete overlay stamping operations use the OMS as the barrier material.

Part of IRTA's work on the project has included finding alternatives for the OMS used in concrete stamping and concrete overlay operations. Concrete gives off water as it cures so water-based materials are not a viable alternative. IRTA has conducted extensive testing and has identified one alternative for concrete stamping and three alternatives for concrete overlay stamping that appear to be technically feasible and have low or zero VOC content.



VOC emissions of the OMS from concrete stamping and concrete overlay stamping in the South Coast Basin may amount to more than one ton per day. Alternatives that might be used include powder, which is still used by some contractors, and the alternatives IRTA has tested. IRTA is currently in the process of conducting cost analysis of the alternatives.

For more information on concrete stamping or concrete overlay stamping release agents, call Katy Wolf at IRTA at (323) 656-1121.

# Calendar

## July 11

“Safer Alternatives to Copper Antifouling Paints: The Shell Game Must Stop!,” Webinar, given by Katy Wolf, sponsored by WSPPN. For information, contact Donna Walden at [dwalden@unr.edu](mailto:dwalden@unr.edu) or call Katy Wolf at (323) 656-1121.

## September 13-23

Pollution Prevention Week

## September 18

Antifouling Strategies (AFS) Workgroup Meeting, 1 to 3 P.M., Cal/EPA Building, 1001 I Street, Sacramento, CA. For information, call Jack Gregg at (415) 904-5246.

## September

South Coast Air Quality Management District Governing Board Hearing for Rule 1113 “Architectural Coatings,” Diamond Bar, CA. For information, call Heather Farr at (909) 396-3672.

## October 28-31

Used Oil/HHW 2013 Training & Conference, Sacramento Convention Center. For information, call Gladys Glaude at (916) 278-4849.

IRTA is working together with industry and government towards a common goal, implementing sensible environmental policies which allow businesses to remain competitive while protecting and improving our environment. IRTA depends on grants and donations from individuals, companies, organizations, and foundations to accomplish this goal. We appreciate your comments

- Yes! I would like to support the efforts and goals of IRTA.  
Enclosed is my tax-deductible contribution of: \$ \_\_\_\_\_
- I would like to receive more information about IRTA.
- Please send me a brochure.

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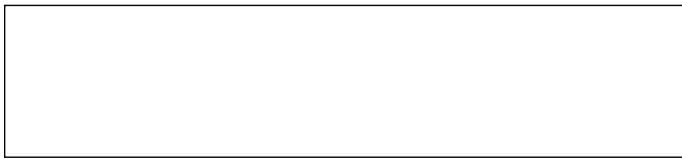
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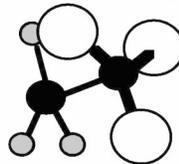
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