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## **EXECUTIVE SUMMARY**

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Rule 1145 – Plastic, Rubber, Leather, and Glass Coatings, was originally adopted by the South Coast Air Quality Management District Governing Board on July 8, 1983, to regulate Volatile Organic Compounds (“VOC”) emissions from plastic, rubber, and glass coating operations (leather substrates were added to the rule during the December 3, 2004 amendment). The rule has been amended fifteen times since the adoption date of July 8, 1983 and this proposal aims to make this the sixteenth amendment. This proposed amendment would, in part, implement control measure MCS-07 – Application of All Feasible Measures of the 2007 AQMP.

The proposed amendments to Rule 1145 are designed to: (1) revise the VOC limit for the multi-colored coatings category and bring it inline with the September 2008 U.S. EPA Control Techniques Guidelines (“CTG”), (2) establish a new coating category for a niche manufacturing process where coated glass panels are used in the manufacturing of refrigerated glass doors for refrigeration cabinets, for which a compliant product is currently not available, (3) update the rule with the deletion of paragraph (c)(3), where automotive coatings can be used in certain circumstances, and (4) make minor clarifications and editorial corrections to the rule.

The first proposed amendment seeks to reduce the VOC limit for the multi-colored category from 685 g/L VOC to 680 g/L VOC, to match the U.S. EPA CTG. Based on a 260 days per year work schedule, AQMD staff calculated the theoretical VOC reduction to be approximately 104 lbs/year (0.4 lbs/day).

The second proposed amendment seeks to add a new coating category to the Table of Standards in Rule 1145. This new proposed coating category, refrigerated glass door coatings, will allow the continued operation for one facility that has been operating under a Hearing Board Variance for the last two years. As per conditions of the Hearing Board Variance, the facility was required to test viable coatings as part of their increments of progress requirement. AQMD staff has determined that the facility has been unable to locate a VOC compliant coating that would perform to the expected performance standards the refrigerated doors must adhere to. The current version of Rule 1145 would place this facilities roll-coating operation into the two-component coating category which is currently limited to one pound of VOC per gallon. The proposed refrigerated glass door coating category will be limited to 4.0 pounds of VOC per gallon and would allow the facility to continue operating in compliance after their Hearing Board Variance expires. This new proposed coating category will result in a minor increase of VOC emissions forgone but

these emissions will only be from one facility. AQMD staff calculated these emissions to be approximately 540.5 lbs/year (2.1 lbs/day) of VOC forgone.

The combined total emissions for the proposed amendments to the multi-colored category and the addition of the refrigerated glass door coatings calculate to approximately 436.5 lbs/year (1.7 lbs/day) of VOC emissions forgone.

The third proposed amendment seeks to delete paragraph (c)(3) in Rule 1145 which allowed automotive coatings to be used on plastic, rubber, leather, and glass products to match the existing coating of motor vehicles providing that the applicator applied for and received written approval from the Executive Officer. Staff has determined that paragraph (c)(3) is now obsolete language since the provisions in Rule 1151 were replaced with the July 1, 2008 provisions shown in Appendix A. The new definition for *Associated Parts and Components* in the current version of Rule 1151 (Appendix A) includes parts and components that are not attached to a motor vehicle or mobile equipment. Staff believes that paragraph (c)(3) in Rule 1145 should be removed since the current version of Rule 1151 addresses the issue of associated parts and components that are not attached to a motor vehicle or mobile equipment.

The fourth proposed amendment will include minor clarifications and editorial corrections to the rule. The Table of Standards has obsolete dates that are no longer relevant and should be removed. This amendment will present VOC limits and effective dates on and after the date of amendment of the rule.

There is no expected cost increase associated with the reduction of the VOC limit for the multi-colored coating category or the addition of a coating category for refrigerated glass door coatings.

## **CHAPTER 1: BACKGROUND**

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**INTRODUCTION**

**REGULATORY HISTORY**

**AFFECTED INDUSTRIES**

## **INTRODUCTION**

AQMD staff reviewed the September 2008 U.S. EPA CTG for Miscellaneous Metal and Plastic Parts Coatings and found a VOC limit discrepancy with the multi-colored coating category in AQMD Rule 1145 – Plastic, Rubber, Leather, and Glass Coatings. The review found that the VOC limit in the current version of Rule 1145, for the multi-colored coating category, was listed as 685 g/L of VOC whereas the CTG VOC limit, for the multi-colored coating category, was listed as 680 g/L. AQMD staff proposes this amendment to Rule 1145 to reduce the VOC limit for multi-colored coating category and bring it inline with U.S. EPA’s current recommended VOC limit of 680 g/L.

## **REGULATORY HISTORY**

Rule 1145 was originally adopted by the SCAQMD Governing Board on July 8, 1983 and has undergone fifteen subsequent adopted amendments. The multi-colored coating category was adopted on February 14, 1997 and the maximum allowable VOC limit was listed as 685 g/L. On October 24, 2008, AQMD staff found the VOC limit out of alignment with the multi-colored coating category of the CTG, while reviewing U.S. EPA’s CTG. The CTG specified a maximum allowable VOC limit of 680 g/L for the multi-colored coating category contrary to the 685 g/L VOC limit shown in the SCAQMD Rule 1145 multi-colored coating category.

## **AFFECTED INDUSTRIES**

Approximately, 5% of the coatings subject to Rule 1145 fall into the multi-colored coating category and the first proposed amendment is intended to align the allowable VOC limit in the multi-colored coating category in AQMD Rule 1145 with the allowable VOC limit in the multi-colored coating category in the September 2008 U.S. EPA’s CTG. AQMD staff does not expect this amendment to affect any facility under the purview of Rule 1145.

There is one facility that would be impacted by the second proposed amendment which proposes to add a new coating category, the refrigerated glass door coating category. This facility currently operates under a two-year variance that will provide continued coverage until December 31, 2009. This facility has worked with AQMD planning and rules staff since February 2008 and has tried several coating chemistries to comply with the increments of progress required by the variance but has not found a coating system that can successfully meet the adhesion requirements for this niche operation.



## **CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1145**

**OVERVIEW**

**PROPOSED MODIFICATIONS TO RULE 1145**

## OVERVIEW

There are four recommended amendments proposed for Rule 1145.

- ▶ Reduce the VOC limit for the multi-colored coating category from 685 g/L to 680 g/L
- ▶ Add one additional coating category for refrigerated glass doors to the Table of Standards in the rule
- ▶ Remove paragraph (c)(3) from Rule 1145; the July 1, 2008 version of Rule 1151 provides language for associated parts and components not attached to a motor vehicle and mobile equipment
- ▶ Make minor clarifications and editorial corrections to the rule

The second bullet item requires additional discussion. AQMD staff proposes to add a new coating category to Rule 1145 to be known as the refrigerated glass door coating category. AQMD staff recognizes one facility that has a niche operation and cannot meet the current VOC limits in Rule 1145 for a two-component coating (the current two-component coating VOC limit is 1.0 lbs/gal). The facility filed and was granted a two-year variance by the AQMD Hearing Board and is allowed to continue operating using the existing coating products that were known to work without adhesion failures until December 31, 2009. The variance was granted on December 19, 2007 as a Hearing Board Action Item and it required the facility to meet increments of progress which included the testing of coatings that may have been viable alternatives to their current coatings. AQMD staff has been working with the facility since February 2008 and has noted that of all the coatings they have tried, all have failed to meet the substrate adhesion requirements. The coating used by the facility is hand roll-coated along the edges of a large glass pane, approximately one inch wide, and serves as an opaque border to hide the undesirable rough edges of the glass panel, the hinges and related hardware, and to provide a substrate for the adhesive that is used to bond three glass panes together (sandwiched) to make one glass door assembly for refrigerated cabinets. These are the doors that are commonly seen at grocery stores in the frozen food aisles. If the coating fails to adhere to the glass substrate, the seal fails, and the door is subject to replacement by the facility under the purview of the warrantee. AQMD staff reviewed the Standard Industrial Classification (“SIC”) codes<sup>1</sup> for glass coatings and found that the facility conducting this operation is the only facility in the South Coast jurisdiction that conducts this type of operation.

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<sup>1</sup> See reference section for SIC code references

The facility manufacturers a glass door as a triple plate glass assembly held together by a sealant that not only bonds the glass panels together but also provides moisture prevention between the glass panels. Several alternative coatings were tried as potential replacements to the two current coatings but none adequately adhered to the glass substrate and as a result, the coating lost adhesion to the glass panels which then resulted in sealant failure between the glass panels. As a consequence, the glass door assembly became a defective door assembly that was rejected while in service and required replacement under warranty. The facility has tried powder coating applications as well as silk-screening operations in the past but both technologies resulted in multiple rejections leading to multiple warrantee issues.

The facility states that it is imperative that the border coating stick to the glass substrate or the seal between the glass panels will fail to prevent moisture entering in between the individual glass panels and raise warrantee issues. The facility has tested several alternative coatings including silk-screening, powder coating and recently photo-initiated (UV/EB) coatings but all have failed to adequately adhere to the glass substrate. The facility tests for coating adhesion using ASTM Method D 3359-97. This test is a simple tape pull off test that is performed by first inscribing six parallel lines in the coating all the way down to the substrate and then crosshatching six more lines, perpendicular to the first six lines, again all the way down to the substrate, in a cross-hatched pattern. A piece of masking tape is then applied directly over the cross-hatched pattern and a pencil eraser is used to rub the tape onto the surface. The tape is then pulled up at a constant rate, but not in a jerky or a fast pull motion, but in a uniform constant pull motion. A 100% successful test will reveal that none of the small squares in the cross-hatched pattern were pulled up. If there are any small squares on the tape the total number of the squares on the tape is divided by 25 (there are 25 squares in the crosshatched pattern) and then multiplied by 100 to determine the percentage of squares that came off on the tape. The facility considers any squares on the tape to be a failure.

## **PROPOSED AMENDMENTS TO RULE 1145**

There are four recommended amendments that are proposed for this rule. Rule 1145 has a coating category that has a VOC limit that is contrary to the U.S. EPA CTG VOC limit. The CTG specifies a maximum VOC limit for multi-colored coatings used on plastic parts to be limited to 680 g/L of VOC. Rule 1145 has a multi-colored coating category that specifies a maximum VOC limit at 685 g/L VOC. The first proposed amendment would be to align the 685 g/L VOC limit for the multi-colored coating category in Rule 1145 with the CTG recommended VOC limit of 680 g/L for the multi-colored coating category.

The second proposed amendment would be to add one additional coating category to the Table of Standards in Rule 1145, for refrigerated glass door coatings. This amendment will allow one facility with a niche coating operation to operate in compliance after their variance expires.

The third proposed amendment will delete paragraph (c)(3) from Rule 1145. Rule 1145, paragraph (c)(3), is no longer necessary after the sunset date of June 30, 2008 for Rule 1151 - Motor Vehicle and Mobile Equipment Non-assembly Line Coating Operations. Rule 1151 was amended back on December 2, 2005 and the provisions of the rule were replaced with the provisions of Rule 1151, Appendix A, on July 1, 2008. AQMD Rule 1151 now includes a new definition for *Associated Parts and Components* which reads; *means structures, devices, pieces, modules, sections, assemblies, subassemblies, or elements of motor vehicles or mobile equipment that are designed to be a part of motor vehicles or mobile equipment but which are not attached to motor vehicles or mobile equipment at the time of coating the structure, device, piece, module, section, assembly, subassembly, or element. The Associated parts and components definition does not include circuit boards.* Any associated parts or components that are not attached to a motor vehicle or mobile equipment but are designed to be a part of a motor vehicle or mobile equipment is now governed under Rule 1151.

The fourth proposed amendment will include minor clarifications and editorial corrections to the rule. The Table of Standards has obsolete dates that are no longer relevant and should be removed. Subparagraph (i)(1)(E) exempts individual coating categories using less than 50 gallons in any one year, if compliant coatings are not available, and provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility. Facilities that have opted for this exemption have been required to provide supporting documentation to AQMD to qualify for this exemption and were subject to the exemption if they received written approval from the Executive Officer. AQMD staff added the language “*and for which written approval of the Executive Officer has been obtained*” at the end of the subparagraph to provide enhanced clarification on this exemption. There will also be some other minor editorial clarifications in the rule as well.

## **CHAPTER 3: IMPACT ASSESSMENT**

**INTRODUCTION**

**IMPACT ASSESSMENT FOR FACILITIES SUBJECT TO  
RULE 1145**

**SOCIOECONOMIC ASSESSMENT**

**POTENTIAL ENVIRONMENTAL IMPACTS**

**COMPARATIVE ANALYSIS**

## INTRODUCTION

The current version of Rule 1145 applies to plastic, rubber, leather, and glass coating operations. There are approximately 115 facilities that fall under the purview of Rule 1145 and these facilities include aerospace, automotive, electronic, and medical industries.

There is no sales specific data available for the classification of the emission inventory in terms of specific coating categories for Rule 1145. For this reason, the model used in the 2004 Staff Report for Rule 1145 will be implemented. The distribution of the emission inventory is based on the results of a survey that was conducted by AQMD in late 2002 and on other verbal information received by coatings suppliers. The 2002 survey included 58 facilities representing a diverse group of industries that perform Rule 1145 coating operations and from this data it was determined that the multi-colored coating category populated 5% of the total distribution studied for all the coating categories. AQMD staff believes that this distribution for the multi-colored coating category continues to be relevant.

The emissions inventory for the Rule 1145 universe was provided by the AQMD emissions reporting branch. The inventory was based on the year 2007 and the total emission inventory for Rule 1145, for 2007, was 0.49 tons per day (“tpd”) of VOC emissions.

## IMPACT ASSESSMENT FOR FACILITIES SUBJECT TO RULE 1145

### *VOC Limit Modification for Multi-colored Coating Category:*

The first proposed amendment seeks to reduce the VOC limit in Rule 1145 for the multi-colored coating category from 685 g/L to 680 g/L of VOC which will yield a theoretical emission benefit that can be calculated. The estimated emissions inventory for multi-colored coating category can be calculated by;

$$0.49 \text{ tpd} * 5\% = 0.03 \text{ tpd} = 49.0 \text{ lbs/day},$$

Next, the gallons of the multi-colored coating can be calculated,

$$5.716 \text{ lbs/gal} * X \text{ gal} = 49.0 \text{ lb/day}, \text{ and} \quad (\text{Note: } 685 \text{ g/L VOC} = 5.716 \text{ lbs/gal VOC}),$$

$$X \text{ gal} = 8.6 \text{ gallon/day so},$$

Using 680 g/L VOC instead of 685 g/L VOC yields,

$$5.675 \text{ lbs/gal} * 8.6 \text{ gal/day} = 48.6 \text{ lbs/day} \quad (\text{Note: } 680 \text{ g/L VOC} = 5.675 \text{ lbs/Gal VOC}),$$

Therefore, the difference between the 680 and 685 g/L VOC calculations is the theoretical emission benefit, which calculates to 0.4 lbs/day, or 104 lbs/year (based on 260 working days per year).

*Adding a New Coating Category for Refrigerated Glass Door Operations:*

The second proposed amendment seeks to add a new coating category to the Table of Standards in Rule 1145 to provide relief to one facility that is currently operating under a two-year variance but has not been able to find a lower VOC alternate coating that could be used successfully in their application. In lieu of this, the new coating category, refrigerated glass door coatings, will be limited to 4 lbs/gal of VOC. The two coating systems currently used by the facility have been found to provide satisfactory performance results.

*Nazdar Coating System:*

AQMD staff calculated the mix ratios for the Nazdar coating system and determined by using the facilities usage records for CY2007 (“CY is for Calendar Year”) that on average 4.6 parts of ink were mixed with one part of catalyst. Staff then calculated the quantity of thinner used and found that on average 5.9 parts of the ink/catalyst mix were mixed with one part thinner. Using this information, staff calculated the VOC content of the Nazdar system,

The ink mixed 4.6 parts ink to 1 part catalyst yields,

$$\{4.6*(3.1 \text{ lbs/gal}) + 1*(4.15 \text{ lbs/gal})\}/5.6 = \{14.26 \text{ lbs/gal} + 4.15 \text{ lbs/gal}\}/5.6 = 3.29 \text{ lbs/gal},$$

[where the VOC of the ink = 3.1 lbs/gal and the VOC of the catalyst = 4.15 lbs/gal],

The ink/catalyst mixture is then mixed with 15% (of that mix) with the RE 190 Thinner,

$$5.6 * 0.15 = 0.84 = 0.8 \text{ and},$$

$$\{5.6*(3.29 \text{ lbs/gal}) + 0.8*(8.08 \text{ lbs/gal})\}/6.4 = 3.89 \text{ lbs/gal}$$

[Where the VOC of the RE 190 Thinner = 8.08 lbs/gal]

Based on this information staff recognizes that a VOC limit of 480 g/L (4.0 lbs/gal) will be appropriate for the new refrigerated glass door coatings category.

AQMD staff determined, after a thorough review of the facilities usage records that the largest quantity used for the NAZDAR coating system was in CY2007; when 123.7 gallons of the NAZDAR Epoxy Screen Ink was used, 27.0 gallons of the ADE677 catalyst was used, and 25.4 gallons of the RE 190 Thinner was used. AQMD staff summed up the totals for the ink, catalyst and the thinner used in terms of pounds of emissions for CY2007 and found,

$$123.7 \text{ gal}*(3.1 \text{ lbs/gal}) + 27.0 \text{ gal}*(4.15 \text{ lbs/gal}) + 25.4 \text{ gal}*(8.08 \text{ lbs/gal}) = 700.7 \text{ pounds of VOC}$$

The emissions forgone for the Nazdar system can be calculated by comparing the result of the equation above with the allowable limit in Rule 1145. This type coating operation would normally fall into the two-component coating category where the VOC limit is one pound per gallon of VOC. Using the same volumes as the equation above and then calculating the pounds VOC,

$123.7 \text{ gal} + 27.0 \text{ gal} + 25.4 \text{ gal} = 176.1 \text{ gallons, and}$

$176.1 \text{ gal} * 1.0 \text{ lbs/gal} = 176.1 \text{ pounds of VOC}$

Therefore, the emissions forgone for the Nazdar coatings would be,

$700.7 \text{ pounds of VOC} - 176.1 \text{ pounds of VOC} = 524.6 \text{ pounds of VOC forgone.}$

*Enthone Coating System:*

AQMD staff calculated the mix ratios for the Enthone coating system and determined by using the facilities usage records for CY2007 that on average 10.4 parts of ink were mixed with one part of catalyst. Staff then calculated the quantity of thinner used and found that on average 12.8 parts of the ink/catalyst mix were mixed with one part thinner. Using this information, staff calculated the VOC content of the Enthone system,

$\{5.0*(3.64 \text{ lbs/gal}) + 0.5*(0.83 \text{ lbs/gal})\}/5.5 = \{18.2 \text{ lbs/gal} + 0.42 \text{ lbs/gal}\}/5.5 = 3.38 \text{ lbs/gal,}$

*[where the VOC of the ink = 3.64 lbs/gal and the VOC of the catalyst = 0.83 lbs/gal],*

The ink/catalyst is then mixed with 6% (of that mix) with the Nazdar RE 190 Thinner,

$5.5 * 0.06 = 0.33 = 0.3 \text{ and,}$

$\{5.5*(3.64 \text{ lbs/gal}) + 0.3*(8.08 \text{ lbs/gal})\}/5.8 = 3.87 \text{ lbs/gal}$

*[Where the VOC of the RE 190 Thinner = 8.08 lbs/gal]*

Based on this information staff recognizes that a VOC limit of 480 g/L (4.0 lbs/gal) will be appropriate for the new refrigerated glass door coating category.

AQMD staff, after a thorough review of the facilities usage records, also determined that the largest quantity of the Enthone coating system was in CY2007; when 5.0 gallons of the Enthone 50-Series Cat-L-Link Epoxy Screen Ink was used, 0.5 gallons of the Enthone Catalyst 45 Part B was used and 0.4 gallons of the Nazdar RE 190 Thinner was used. AQMD staff summed up the totals for the ink, catalyst and the thinner used in terms of pounds of emissions for CY2007 and found,

$5.0 \text{ gal}*(3.64 \text{ lbs/gal}) + 0.5 \text{ gal}*(0.83 \text{ lbs/gal}) + 0.4 \text{ gal}*(8.08 \text{ lbs/gal}) = 21.8 \text{ pounds of VOC}$

The emissions forgone for the Enthone system can be calculated by comparing the result of the equation above with the allowable limit in Rule 1145. This type coating operation would normally fall into the two-component coating category and the VOC limit is one pound per gallon VOC. Using the same volumes as the equation above and then calculating the pounds VOC,



$5.0 \text{ gal} + 0.5 \text{ gal} + 0.4 \text{ gal} = 5.9 \text{ gallons, and}$

$5.9 \text{ gallons} * 1.0 \text{ lbs/gal} = 5.9 \text{ pounds of VOC}$

Therefore, the emissions forgone for the Enthone coatings would be,

$21.8 \text{ pounds of VOC} - 5.9 \text{ pounds of VOC} = 15.9 \text{ pounds of VOC forgone.}$

Combining the emissions forgone for both the Nazdar and the Enthone coating systems yields,

$524.6 \text{ lbs VOC/CY2007 forgone} + 15.9 \text{ lbs VOC/CY2007 forgone} = 540.5 \text{ lbs VOC/CY2007 forgone}$

The emissions for the first two amendments to this rule can now be calculated. The amendment to the multi-colored category combined with the emissions forgone for the refrigerated glass door coatings yields,

$540.5 \text{ lbs/year VOC emissions forgone} - 104 \text{ lbs/year VOC emission benefit} = 436.5 \text{ lbs/year VOC emissions, forgone.}$

*(Based on a theoretical emissions benefit of 104 lbs/year VOC)*

## **SOCIOECONOMIC ASSESSMENT**

Since PAR 1145 does not significantly affect air quality or emissions limitations, a socioeconomic analysis is not required [H&SC 404408.7(a) and (b)]. Proposed Amended Rule 1145 (PAR 1145) has three separate provisions. The first provision of PAR 1145 reduces the VOC limit for the multi-color coatings category from 685 g/L to 680 g/L to align it with the September 2008 U.S. EPA Control Techniques Guidelines (CTG). No additional costs from such alignment are expected. The second provision of PAR 1145 creates a new coating category for refrigerated commercial glass door coatings. The change provides additional flexibility for one facility with special manufacturing requirements, which would lead to savings for the facility. The third provision of PAR 1145 makes editorial changes to the existing rule language that have no associated cost implications.

In summary, PAR 1145 does not increase the cost of compliance for any facility and therefore will not have any significant socioeconomic impacts.

## **POTENTIAL ENVIRONMENTAL IMPACTS**

Pursuant to the California Environmental Quality Act (CEQA) and the AQMD's Certified Regulatory Program (Rule 110), appropriate documentation will be prepared to analyze any potential adverse environmental impacts associated with the Proposed Amended Rule 1145.

Comments received at the public workshop and CEQA scoping meeting will be considered when preparing the CEQA document.

## **DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**

The draft findings will be added later.

### **COMPARATIVE ANALYSIS**

#### **Health and Safety Code Section 40727.2**

As required by Health and Safety Code Section 40727.2, the purpose of this analysis is to identify and compare any other AQMD or federal regulations that apply to the same equipment or source type. The existing as well as the proposed VOC limits in Rule 1145 are not in conflict with the National Emission Standard for Hazardous Air Pollutants (“NESHAP”): Surface Coating of Plastic Parts and Products; Final Rule (NESHAP for Plastics Substrates) Federal Register: April 19, 2004 (Volume 69, Number 75).

The NESHAP for Plastic Substrates sets forth Hazardous Air Pollutants (“HAP”) emission limits for existing and new and reconstructed affected sources. Affected sources under this NESHAP are plastic coating operations that are major sources under federal law or are coating operations located within the confines of a federal major source. The NESHAP for Plastics explicitly exempts non-major sources, operations regulated under another NESHAP, military installations, research facilities, and reinforced plastic composites.

The proposed amendments to Rule 1145 reduce emissions of VOC, but Rule 1145 and the proposed amendments do not regulate HAP emissions directly. Therefore, the existing as well as the proposed VOC limits of Rule 1145 is not in conflict with federal regulations.

## REFERENCES

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Nazdar ADE Series Epoxy Screen Ink, Opaque Black link:  
[http://www.nazdar.com/wv/private/document.aspx?prd=ADE52%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E12/08/2008%7E%7EOpaque%20Black&language=d\\_EN&productID=ade](http://www.nazdar.com/wv/private/document.aspx?prd=ADE52%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E12/08/2008%7E%7EOpaque%20Black&language=d_EN&productID=ade)  
Nazdar ADE677 Catalyst MSDS link:  
[http://www.nazdar.com/wv/private/document.aspx?prd=ADE677%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E12/08/2008%7E%7ECatalyst&language=d\\_EN&productID=ade677](http://www.nazdar.com/wv/private/document.aspx?prd=ADE677%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E12/08/2008%7E%7ECatalyst&language=d_EN&productID=ade677)  
Nazdar RE-190 Thinner MSDS link:  
[http://www.nazdar.com/wv/private/document.aspx?prd=RE190%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E11/18/2008%7E%7EThinner&language=d\\_EN&productID=re190](http://www.nazdar.com/wv/private/document.aspx?prd=RE190%7E%7EPDF%7E%7EMTR%7E%7ENAM%7E%7EEN%7E%7E11/18/2008%7E%7EThinner&language=d_EN&productID=re190)
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