

# Autowave® MM Optima

Autowave MM Optima is a comprehensive, one-stop, waterborne basecoat application system known for its excellent hiding properties. It facilitates the application of all basecoat layers using a wet-on-wet technique, without flash off between coats, increasing application efficiency and productivity. Autowave Optima must be used in conjunction with a specified Sikkens clearcoat to provide protection from the environment.



### Safety Considerations

- Use suitable personal protection
- When exposed to paint or solvents AkzoNobel recommends the use of a fresh air supply respirator



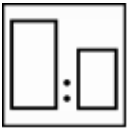
### Surface Preparation

- Complete Panel
- Color Blend Area
- Sand with P600, dry
- P1000 on an interface pad and D/A sander or de-gloss using a gray scuff pad



### Mixing – Preparation

- Gently shake toner before each color pour
- Metallic MM toners must be hand stirred before first use
- Stir completed formula color before reducing



BY VOLUME  
STICK #14

Mix	By Volume
100	Parts Autowave Optima Color
0 – 40*	Parts Optima WB Activator / WB Activator HT/LH (stir to combine)

\*For color formulas that contain ≥80% MM Z145, mixing ratio is 100:10, maximum, using WB Activator Plus.

\*For solid white color formulas, the minimum ratio is 100:10.

\*When using Optima WB Activator HT/LH in extreme conditions, ratio is up to 100:40.



### Spray-Gun Set-Up – Compliant Gravity

- 1.2 – 1.3 mm
- 1.4 mm (High Temp / Low Humidity conditions)

### Application Air Pressure

- Consult manufacturer specifications

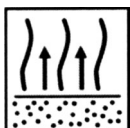


### Application Solid Colors

- 1 + ½ coats
- No flash off between coats

### Application Effect Colors

- 1 + ½ coats
- No flash off between coats

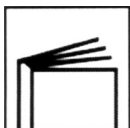


### Flash Between Coats

- Do not flash off between coats

### Flash Before Clearcoat

- Until completely matte and dry



### Recoatable With

- Sikkens VR Clearcoats

Read the complete TDS and the product Safety Data Sheet (SDS) for detailed product information.

## Description

Autowave MM Optima is a comprehensive, one-stop, waterborne basecoat application system known for its excellent hiding properties. It facilitates the application of all basecoat layers using a wet-on-wet technique, without flash off between coats, increasing efficiency and improving productivity. Autowave Optima must be used in conjunction with a specified Sikkens clearcoat to provide protection from the environment.

## Suitable Substrates



- Existing OEM finishes
- Stable existing finishes
- Sikkens primer surfacers and sealers
- Do not apply over thermoplastic acrylic lacquers
- Do not apply directly over acid containing washprimers or pre-treatments

## Products and Additives

<b>Product</b>	<ul style="list-style-type: none"> <li>• Autowave Optima MM toners – Per color formula</li> </ul>
<b>Hardeners</b>	<ul style="list-style-type: none"> <li>• Autowave Optima WB Hardener – Item # 605599</li> </ul>
<b>Activators</b>	<ul style="list-style-type: none"> <li>• Autowave Optima WB Activator – Item # 605361</li> <li>• Autowave Optima WB Activator HT/LH – Item # 609413</li> <li>• Autowave Optima WB Activator Plus – Item # 605334</li> </ul>
<b>Additives</b>	<ul style="list-style-type: none"> <li>• Autowave Optima Blending Agent – Item # 611348</li> </ul>

○ SDS and TDS for products available online at – <https://my.anaac.net/>

## Basic Raw Materials



- Autowave Optima MM toners – Water based acrylic dispersion

## Substrate Preparation



### Pre-Cleaning

- If needed pre-wash the repair with warm soap and water. Rinse completely with clean water.
- The appropriate surface cleaners in the AkzoNobel assortment (M600, Autoprep Ultraprep, Antistatic) should be used for initial cleaning steps

**Note:** For comprehensive surface cleaning information, refer to the Technical Service Bulletin *TSB AN23.01 AkzoNobel Surface Cleaning Recommendations and Best Practices* at <https://my.anaac.net/>



Sanding Preparation	Repair Area	Blend Area
<b>Existing Finishes – Dry</b>	<ul style="list-style-type: none"> <li>• Final sanding step – #P600</li> </ul>	<ul style="list-style-type: none"> <li>• Sand with P1000 using a soft interface pad and D/A sander</li> </ul>



### Existing Finishes – Wet

- Final sanding step – #P1000
- Abrade using a gray scuff pad and a quality scuffing paste with water



### Surface Cleaning – Prior to Paint Application

- Clean with M600 Surface Cleaner, Autoprep Ultraprep (VOC compliant), or Antistatic surface cleaners, as appropriate
- Use M200 or M25 Surface Cleaner as a final wipe-down before refinishing

## Product Agitation



### Color Preparation

- Shake paint on a paint shaker or vigorously by hand for 45 seconds before first use
- For metallic, pearl or effect toners, also stir the mixing color before first use
- Gently shake the Autowave Optima toner before each pour
- Once all the toners in a formula have been combined, stir the paint prior to reduction and then stir again after the Autowave Optima WB Activator has been added



## Mixing Color Formulas and Products



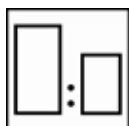
### Formulas

- Formulas are available to match the most popular OEM colors. These are available in MIXIT.
  - Follow the recommended undercoat color/shade guidance provided in MIXIT
  - For easy mixing of color formulas or products, final mixing including hardening, reduction and the addition of additives can be performed using the MIXIT program

### Custom Mixed Colors

- NOTE:**
- Colors mixed without a formula or when using a pure Autowave Optima MM toner (except MM Z145) MUST be mixed with MM C063 Converter according to the *Custom Color Mix* in the *Mixing* section below to maintain the appropriate system properties

## Mixing – Color



BY VOLUME  
STICK #14

Mix  
100  
0 – 40\*

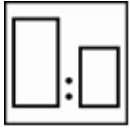
### Standard Mix – All Color Formulas

Parts Autowave Optima color formula (stir to combine)  
Parts Autowave Optima WB Activator / WB Activator HT/LH (stir to combine)

\*For solid white color formulas, the minimum ratio is 100:10

- Optima WB Activator
  - For standard climate conditions. Add the required amount of WB Activator to the Autowave Optima color formula based on the relative humidity, application temperature, job size, and airflow.
- Optima WB Activator HT/LH
  - Designed for high-temperature, low-humidity conditions. May also be used to optimize application properties in less extreme conditions.
- Optima WB Activator Plus
  - Designed specifically for Autowave Optima MM Z145 Deep Black toner to optimize viscosity and application properties

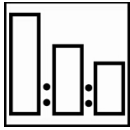
**Note:** Refer to the *Climate Guide* section located at the end of this TDS for more information.



BY VOLUME

**Mix**      **MM Z145 Mix**  
**100**      Parts Autowave Optima MM Z145\*  
**0 – 10**    Parts Autowave Optima WB Activator Plus

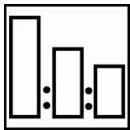
\*Color formulas that contain ≥80% MM Z145



BY VOLUME

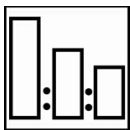
**Mix**      **Custom Color Mix**  
**60**      Parts Autowave Optima custom color  
**40**      Parts Autowave Optima MM C063 Converter (stir to combine)  
**0 – 40**    Parts Autowave Optima WB Activator / WB Activator HT/LH (stir to combine)

If improved system robustness including stone chip resistance, adhesion and system hardness is desired, Autowave Optima basecoat may be mixed with WB Hardener before reduction.



BY VOLUME

**Mix**      **Hardened Basecoat Mix**  
**100**      Parts Autowave Optima color formula  
**5**      Parts Autowave Optima WB Hardener (stir to combine)  
**0 – 40**    Parts Autowave Optima WB Activator / WB Activator HT/LH (stir to combine)



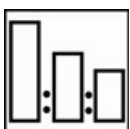
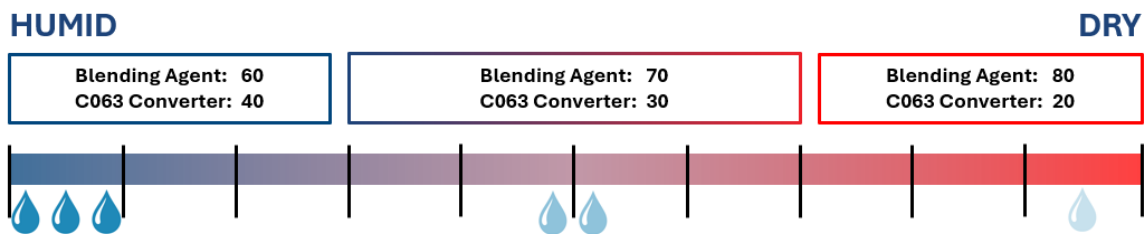
BY VOLUME

**Mix**      **Underhood Color Mix**  
**100**      Parts Autowave Optima underhood color formula  
**10**      Parts Autowave Optima WB Hardener (stir to combine)  
**0 – 40**    Parts Autowave Optima WB Activator / WB Activator HT/LH (stir to combine)

## Mixing – Blending Agent

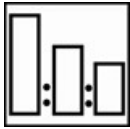


Autowave Optima Blending Agent for the “wet bed” may be mixed in 3 different ratios. Select the most suitable ratio based on spray environment temperature and humidity.



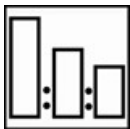
BY VOLUME

**Mix**      **Blending Agent Mix – High Humidity**  
**60**      Parts Autowave Optima Blending Agent  
**40**      Parts Autowave Optima MM C063 Converter  
**0 – 25**    Parts Optima WB Activator / WB Activator HT/LH (stir to combine)



BY VOLUME

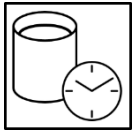
**Mix**      **Blending Agent Mix - Standard**  
**70**      Parts Autowave Optima Blending Agent  
**30**      Parts Autowave Optima MM C063 Converter  
**0 – 25**    Parts Optima WB Activator / WB Activator HT/LH (stir to combine)



BY VOLUME

**Mix**      **Blending Agent Mix – Low Humidity**  
**80**      Parts Autowave Optima Blending Agent  
**20**      Parts Autowave Optima MM C063 Converter  
**0 – 25**    Parts Optima WB Activator / WB Activator HT/LH (stir to combine)

## Pot Life When Mixed



### Product Mixes

- Autowave Optima colors (including M85/M88 metallics)
- Autowave Optima colors with WB Hardener

At 70°F (21°C)

- 1 month
- 1 hour

## Spray Gun Setup



Consult spray gun manufacturer instructions for detailed spray gun information.

Spray Gun	Fluid Tip	Notes
Compliant Gravity Feed	1.2 – 1.3 mm	Psi per spray gun manufacturer
Compliant Gravity Feed	1.4 mm	Application in high temp / low humidity conditions
Paint Strainers	<ul style="list-style-type: none"> <li>• Use waterborne suitable 125-micron paint strainers</li> </ul>	

## Application



### Application – Solid Colors

- First, apply an even-flowing wet coat (80% opacity) with a 6 to 8-inch (15-20 cm) application distance
- Immediately follow the first coat by applying an intermediate coat (reaching full opacity) with a 6 to 8-inch (15-20 cm) application distance from the panel surface



### Application – Metallic and Effect Colors

- First, apply an even-flowing wet coat (80% opacity) with a 6 to 8-inch (15-20 cm) application distance
- Immediately follow the first coat by applying an intermediate coat (reaching full opacity) with an increased spray gun distance of 8-12 inches (20-30 cm) from the panel surface



### Application – 3-Stage Finishes

- When repairing a 3-stage finish, ensure the layer 1 color has a seamless visual transition before applying layer 2
- Allow layer 1 to completely flash off before applying the ready-to-spray Blending Agent wet bed (for spot repairs) and the layer 2 color
- In many cases, application of the layer 2 color will benefit from a larger spray gun fluid tip (1.3-1.4 mm) and in high temperature / low humidity conditions (1.4) fluid tip

**Note:** For detailed 3-stage application information, refer to the *Autowave Optima 3-Stage Application and Repair* TDS at <https://my.anaac.net/>.



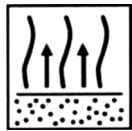
### Spot Repair Application

A pre-coat “wet-bed” application using Blending Agent mixed ready-to-spray (RTS) should be used for spot repairs.

- First, apply a full-wet coat of Blending Agent (RTS) over the blend area
- Immediately follow by applying an intermediate (blending/fading-out) coat using increased distance into the wet Blending Agent. Avoid hard stops by fading the color out and away to the sides.
- Next, on the repair area, apply an even-flowing wet coat (80% opacity) with a 6 to 8-inch (15-20 cm) application distance, followed by an intermediate coat (reaching full opacity) with an increased spray gun distance of 8-12 inches (20-30 cm) on the repair area

**Note:** If increased color transparency is desired, the Blending Agent wet bed may be added to the mixed color prior to blending at a ratio of 100 parts RTS color with 30 parts RTS Blending Agent.

### Flash Drying

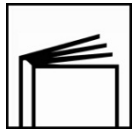


#### Flash Between Coats

- Do not flash off between coats

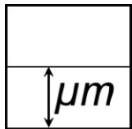
#### Flash Before Clearcoat

- Until completely matte and dry



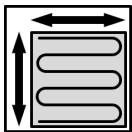
- Flash time is influenced by ambient temperature, humidity, applied thickness, and available air flow
  - Flash can be reduced to a minimum by using air accelerator systems no closer than 3 feet (≈1 m) from the repair
  - Introducing heat is also an option. When heat is used for drying, allow the object to cool down to application temperature before proceeding with color or clearcoat application.
- Maximum flash time is 24 hours at 70°F (21°C). If this time is exceeded, the basecoat must be abraded and reapplied.

### Film Thickness – Using Suitable Application



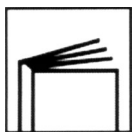
- 1 coat will achieve a thickness of 0.3 – 0.8mils (8 – 21μm), dry
- The maximum total thickness is 1.2 mils (30μm)

### Theoretical Coverage



- With the recommended application the theoretical material usage is ≈256 ft<sup>2</sup>/gallon (≈6.3 m<sup>2</sup>/liter) at 1 mil thickness (25.4μm) and 100% transfer efficiency
- Actual coverage is dependent on many factors. These may include the shape of the object, surface smoothness, application technique, and other variables.

### Recoating



After the stated dry time Autowave Optima may be recoated with the following materials:

- Sikkens VR Clearcoats

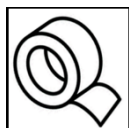
## Points of Attention



### Denibbing

- Allow Autowave Optima to flash off until completely matte and dry
- Lightly sand the contaminated basecoat surface with a P1000, preferably a soft-backed dry sanding paper
- Thoroughly remove any sanding dust residue before reapplying Autowave Optima using the recommended application

**Note:** Do not apply multiple lighter coats. This will result in a coarse basecoat surface.



### Two-Tone Masking

- Autowave Optima colors can be taped (i.e. two-toning) after completely matte and dry
- Increasing temperature, especially in combination with air movement, improves the ability to apply masking. If heat is used, let the object cool down to ambient temperature before masking.



### Black Precoat

- In the event of a black precoat requirement, such as with special effect colors, use ready-to-spray MM Z145 deep black

## Cleaning of Equipment



- Clean equipment and dispose of waste following local and federal regulations
- Clean and rinse the spray gun thoroughly after use with water from a squirt or spray bottle
- Finish cleaning with Autowave Gun Cleaner
  - Do not use any conventional thinner unless removing dried waterborne paint deposits
  - Do not soak the spray gun for long periods either with Autowave Gun Cleaner or WB Activator
- Purge the spray gun with Autowave WB Activator and blow dry as a final step

## VOC / Regulatory Information



### Product

### VOC Pounds per Gallon

### VOC Grams per Liter

- |                                    |         |        |
|------------------------------------|---------|--------|
| • Autowave Optima (ready to spray) | – <3.50 | – <420 |
|------------------------------------|---------|--------|
- Do not handle until the Safety Data Sheets have been read and understood. Regulations require that all employees be trained on Safety Data Sheets for all chemicals with which they come in contact. The manufacturer recommends the use of an air-supplied respirator when exposed to vapors or spray mist.

## Product Storage



- Store unopened, or products in use with approved closed containers and proper labeling. Store in moderate temperatures between 40°F - 95°F (5°C – 35°C). Avoid too much temperature fluctuation. Optimal storage temperature is approximately 70°F (21°C).
- Refer to the Sikkens Product Shelf-Life Overview TDS or the current price list for the most up-to-date shelf-life information



## Climate Guide

### Spray Booth Relative Humidity

	0%	20%	40%	60%	80%	100%
<b>Spray Booth Temperature °F</b> 100+° F (40° C)	30-40	30-40	30	20	10	0-10
95° F (≈35° C)	30-40	30 <i>WB Activator HT/LH</i>	20	20	10	0-10
90° F (≈30° C)	30	20	20	10 <i>WB Activator / WB Activator HT/LH</i>	10	0-10
80° F (≈25° C)	20	20	10 <i>WB Activator</i>	10	0-10	0-10 <i>WB Activator</i>
70° F (≈20° C)	20	10	10	10	0-10	0-10

The reduction percentages are intended as a guide using the spray booth temperature and relative humidity (RH%). Ratio for each Activator WB can be adjusted between 0-40% depending on the spray booth climate conditions.

**WB Activator:** For use in conditions between 70-80 °F (≈20-25 °C) and above 40% RH

**Activator WB HT/LH :** For use in high temperature / low humidity conditions as well as standard conditions.

**Activator WB Plus:** For use with color formulas that contain ≥80% MMZ145.

*\*Please refer to TDS for additional information.*

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#### FOR PROFESSIONAL USE WITH SUITABLE HS&E EQUIPMENT

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Safety Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advices given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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#### Head Office

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