



■ - BASF

We create chemistry

Acronal® ECO 7653

Clean Air for Everyone

The 3rd Generation Near-Zero VOC Low Odor Stain
Resistance Polymer Dispersion for Interior Paints

Clean Air for Everyone

at a Near-Zero VOC Low-Odor Environment

Functionalities Matter

Architects and construction professionals consider paint durability is of utmost importance



Clean Air in High Demand

Frequency of painting and repainting increasing in emerging markets such as China and India

Green ECO Labelling Network

Develops and promotes sustainable ECO labelling practices including paints / coatings, home appliances, lights, food and so on



Green Labelling – Near-Zero VOC Standards

China	: <20g/L
Australia	: 16g/L
Singapore	: 25g/L
India	: 50g/L
Malaysia	: 50g/L
Thailand	: 50g/L
The Philippines	: 50g/L



No Stain No Pain

It's best to have low odor and outstanding stain resistance performance in one dispersion – but is it technically possible?

Saving is Equally Important

- Newly painted room can be occupied right away – save money for additional rental.
- Hotel rooms will be available for reservation sooner
- More durable paints mean less repainting required

A Common Pollutant

Volatile organic compounds (VOC) are the most common indoor air pollutants. Near-zero VOC literally means cleaner air



Indoor Air Quality is Important

Concentrations of many VOC are consistently higher indoors (up to ten times higher) than outdoors



How to formulate an odorless paint with excellent stain resistance and other advanced functionalities?

The solution is BASF's Acronal ECO 7653.

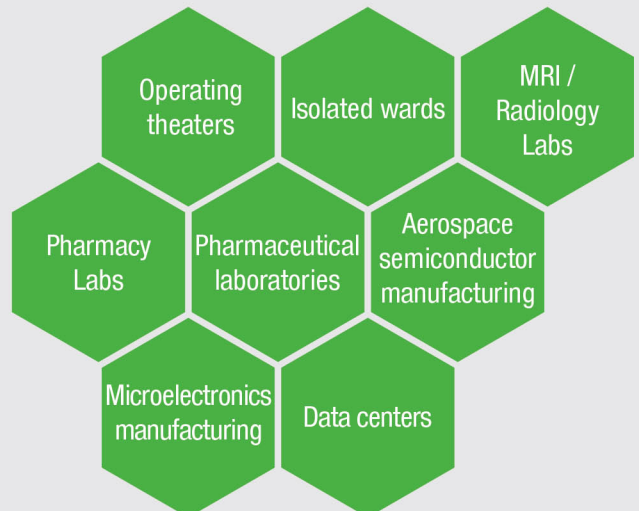
Clean Air Everywhere – even for Mission Critical Environments

Whilst drying, paints and coatings are one of the commonly-known sources of odor for indoor facilities such as apartments, kindergartens and even clean rooms which require strict environment control. With near-zero VOC and low odor properties, Acronal ECO 7653 formulated paints will be ideal for below applications with minimal level of pollutants:

General Applications



Mission Critical Areas



Acronal ECO 7653

The 3rd Generation Near-Zero VOC
Low Odor Stain Resistance Polymer
Dispersion for Interior Paints



Near-Zero VOC, Low Odor, Water-based Dispersion for Clean Air

Volatile Organic Compounds (VOC) are one of the most common pollutants of indoor air quality which may induce adverse health conditions.

Paints from Acronal ECO 7653 can contain as low as 0.27g/L* Total VOC

- Formulated using low VOC components
- APEO and ammonia free
- BASF's unique production technology – free from VOCs and odor causing chemicals

Paints from Acronal ECO 7653 will have near-zero VOC property – bringing you clean and fresh air after painting!

Compliant with Australian Ecolabel Program, China JG/T 481-2015 near-zero VOC standard and other Green Labelling requirements in different Asia Pacific countries.

Fresh air painting / repainting experience is one of the most demanding features from end-users

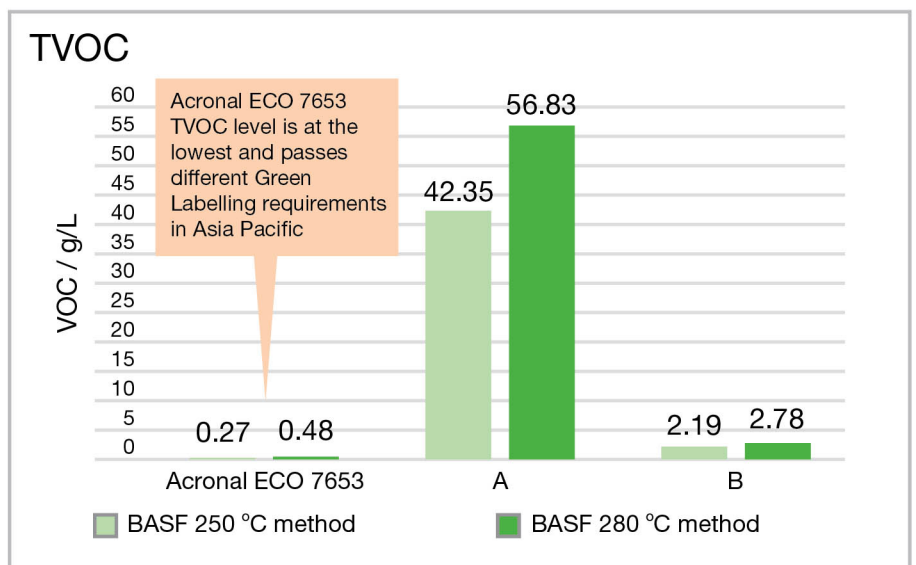
Use Acronal ECO 7653 to reduce VOC exposure in paints and it will eventually lead to less odor emitted to the air

Water-based for Sustainability

This water-based coating is not only more sustainable and environmentally-friendly, and it has less odor compared to solvent-based dispersions. Water-based paints do not react with pollutants and hence less odor will be emitted once applied to surfaces.

*at 50% PVC

^Benchmark A and Benchmark B are two commercially available interior paints from China.



TVOC levels of Acronal ECO 7653 at 50% PVC, Benchmark A and Benchmark B paints^

Use FoamStar® ED 2522, FoamStar ST 2400, Loxanol® CA 5290, Loxanol CX 5308 formulation additives to lower the VOC and odor level further

Acronal ECO 7653 passes the Dispersion, Paint, and Paint emission VOC limits (Interior) from the following countries in Asia Pacific:

Country	Scheme	VOC limit
China	JG/T 481-2015	<20g/L
Australia	The Australian Ecolabel Program	16g/L
New Zealand	The New Zealand Ecolabelling Trust	55g/L
India	Green Seal - GS -11	50g/L
Malaysia	ECO labeling scheme	50g/L
Singapore	ECO labeling scheme	25g/L
Thailand	ECO labeling scheme	50g/L
Philippines	GREEN CHOICE PHILIPPINES	50g/L

Near-Zero VOC standard

0.27g/L

TVOC Level of Paints from Acronal ECO 7653

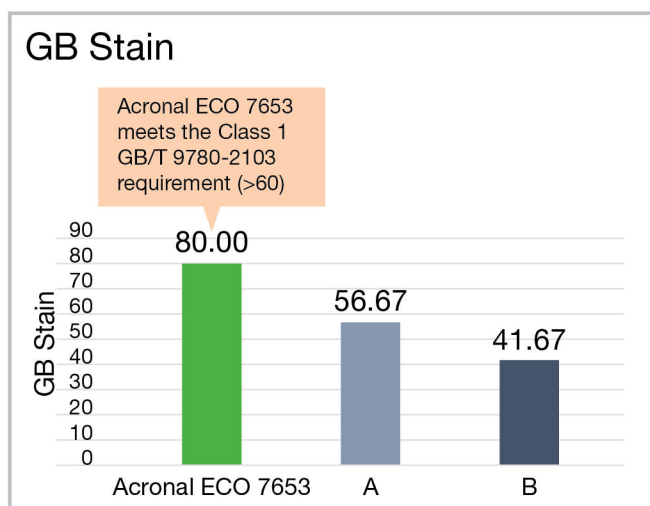
Acronal ECO 7653 reduces VOC levels significantly without compromising different application properties



Stain Resistance

How to keep stubborn stains such as tea, ink, crayon away from newly painted walls?

With carefully calculated formulas and the latest innovative technologies, the stain resistance performance of BASF Acronal ECO 7653 formulated paint outperforms other “low-VOC, stain resistance” paints in the markets – keeping the interior walls look nice and fresh while enjoying clean air.



Stain resistance comparison of Acronal ECO 7653 at 50% PVC, Benchmark A, Benchmark B

The test was done according to GB/T 9780-2013 standard – a test method for stain resistance and stain removal of film of architectural coatings and paints.

GB stain resistance was calculated from the reflective index differences between areas of the 150-micron thick paint without stain, to that with stain following 200 soap wash removal cycles.

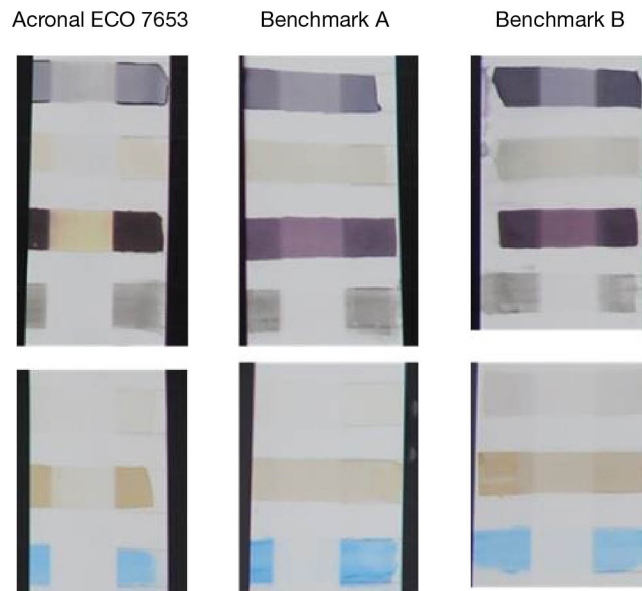
Use **Dispex® CX 4320** dispersing agent or **Loxanol® CA 5308** coalescing agent for enhanced film formation that will deliver good application properties.

Seeing is believing!

Only a minimal amount of stains stay on Acronal ECO 7653 formulated paint.

GB stains (hydrophilic and hydrophobic) are:

(in descending order) Blue black ink, water soluble nigrosine, alcohol soluble nigrosine, Vaseline black, vinegar, black tea and blue crayon* at bottom



*Blue crayon is not an official stain of GB/T 9780-2013 standard.



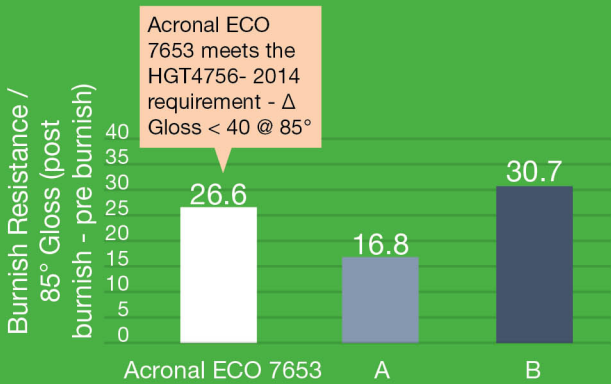
Wet Scrub Resistance

Wet scrub resistance is one of the measurements of durability of interior paints as it reflects the relative resistance of paints to erosion when scrubbed. The better the wet scrub resistance, the more durable the interior paints are.

According to GB/T 9756-2009, only the paints that passed 5,000 cycles can be classified as premium grade paint. Acronal ECO 7653 formulated paint offers excellent wet scrub resistance even after 10,000 cycles – which means it possesses excellent washability and is able to withstand thousands of cleaning processes.

Use **Dispex® CX 4320** dispersing agent to improve wet scrub and blocking resistance; **Dispex® CX 4231** to enhance wet scrub and high gloss performance.

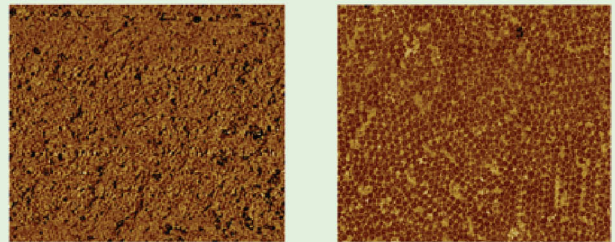
Burnish Resistance



Burnish resistance is an important paint property that indicates how the dry film will resist dry polishing.

By meeting the HGT4756-2014 standard, Acronal ECO 7653 formulated paint performs very good resistance over polishing and rubbing.

Acronal ECO 7653 vs Standard Acrylic Polymer



Film morphology of Acronal ECO 7653 (left) and standard acrylic (right) polymer by AFM on cross section

Properties	Acronal ECO 7653	Standard acrylic polymer dispersion
Film formation	Multiphase particle morphology (hard and soft domains within each polymer particle)	Single phase requiring compromise of hardness and coalescent demand
Coalescent demand	More soft phase promotes coalescence of the polymer chains from different particles: reduce the coalescent demand	More coalescent demand
VOC and odor	Lower VOC and odor with reduced coalescent	High level of VOC and odor with high coalescent demand
Stain resistance	Balanced hydrophilic and hydrophobic composition: increases stain resistance for both	Typically favors either hydrophilic or hydrophobic stain resistances
Film hardness	Hard phase (light phase) provides hardness of film, improves the wet scrub resistance	High at high coalescent demand

Physical Properties of Acronal ECO 7653

Solids Content	46% ± 1
pH	7.0 – 8.5
Viscosity (Brookfield RVT20 rpm #1, 23 °C)	1000 – 3000 mPa.s
Minimum Film Formation Temperature	ca. 25°C

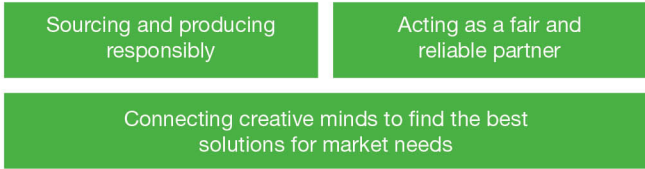


BASF – Your Partner of Choice in Sustainable Architectural Coatings

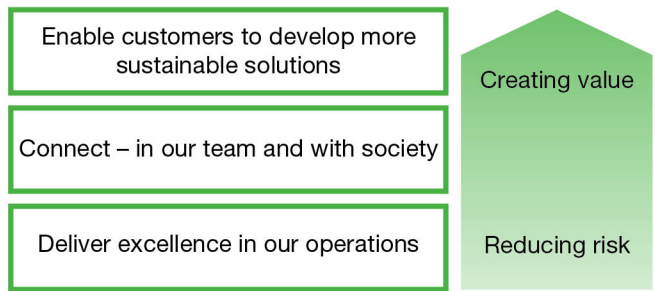
At BASF, we create chemistry that helps the architectural coatings industry meet specific needs for ecologically friendly sustainable solutions with outstanding functionality and performance in different aspects.

We create chemistry for a sustainable future

BASF wants to contribute to a world that provides viable future with enhanced quality of life for everyone. We do so by creating chemistry for our customers and society and by making the best use of available resources. We live our corporate purpose “We create chemistry for a sustainable future” by:



Driving sustainability for long-term success



Applied sustainability – what we stand for

We combine extensive know-how and experience with business and customer interaction. Working together, we develop differentiated solutions to drive your business.



Renewables

Content of a specific renewable raw material



Biodegradability

Degradability in a soil / water compostability



Cost savings

Reduction of costs during production, applications, use, disposal



Biodiversity

Impact on insects, animals, land use



Climate change

Reduction of CO₂ / GHGs emissions, global warming potential, Carbon footprint



Emissions

In / outdoor emissions (VOCs, Nox, Sox, HFCs), dust emergence, noise nuisance



Waste reduction

Reduction of waste during production, processing



Health & safety

Reduced toxicity, drinking water / food contact approval, fire properties



Resources Efficiency

Abiotic resource depletion potential for fossil and non fossil resources, resources scarcity, recycling possibilities



Water

Consumption, treatment, leakage



Energy

Primary energy demand



Durability

Extended renovation cycles, improved shelf life, prolonged life span, resistance to aging and decay

Basic technical data and suitable area of application are indicated, but it must be stressed that this information is intended as a general guidance.

For more detailed information on specific applications, please consult our local sales or technical BASF representatives.

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