

CERACOAT COATING AS ANTI FOG/ANTI-FOGGING:



Powerful double formula: Anti-fog + Cleaning in one step

Anti-fog agents, also known as anti-fogging agents and treatments, are chemicals that prevent the **condensation** of **water** in the form of small **droplets** on a surface which resemble **fog**. Anti-fog treatments were first developed by **NASA** during **Project Gemini**, and are now often used on

transparent **glass** or **plastic** surfaces used in **optical** applications, such as the **lenses** and **mirrors** found in **glasses**, **goggles**, **camera lenses**, and **binoculars**. The treatments work by minimizing **surface tension**, resulting in a non-**scattering film** of **water** instead of single droplets. This works by altering the degree of **wetting**. Anti-fog treatments usually work either by application of a **surfactant** film, or by creating a **hydrophilic** surface.

CERACOAT anti-fog coating is an anti-fog coating of the next generation, using nano technology!

Powerful double formula: Anti-fog + Cleaning in one step:

High performance anti-fog effect and lasting care of glasses and plastic surfaces

CERACOAT Anti Fog Glass / Plastic is an absolutely solvent free water based solution which unites two products in just one: a highly effective cleanser and a powerful anti-fog thanks to innovative nano-technology. This special formula based on a combination of nano-chemical wetting and organo functional modified copolymers is responsible for binding directly with the treated surface. After treatment, the surface has a transparent, powerful anti-fog coating, which prevents effectively all kind of glasses and transparent plastic materials from fog, which affected the visibility and could cause a safety problem. Due to the especially developed nano-chemical wetting, which combines directly with the treated surface, there is no optical distortion. The highly efficient anti-fog formula of **CERACOAT Anti Fog Glass / Plastic** guarantees a very efficient anti-fog effect, even in conditions of great temperature amplitudes (difference of temperature = > 25°C).

Examples of use:

Can be applied / used on every glass and/or plastic surface

- ✓ Glasses, Sunglasses, Skiing glasses, Diving glasses, all kind of transparent plastic materials
- ✓ Visors of Helmets - all kind of working glasses and safety eyewear
- ✓ Inner windshields of cars, trucks, boats - windows in general
- ✓ Mirrors, shower cabins, glasses in the medical field

Product characteristics:

- ✓ Strong anti-fogging properties / Removes fingerprints, grease and other dirt easily
- ✓ Clean and shining surface free from streaks is the result
- ✓ Excellent easy-to clean effect / Does not attack high-quality coated glasses such as hard-, anti-reflex- and top-coating because of the alcohol-free formulation. No skin irritation
- ✓ Food safe (inert) / Solvent free / biodegradable / PH-neutral / environmentally friendly / non-toxic

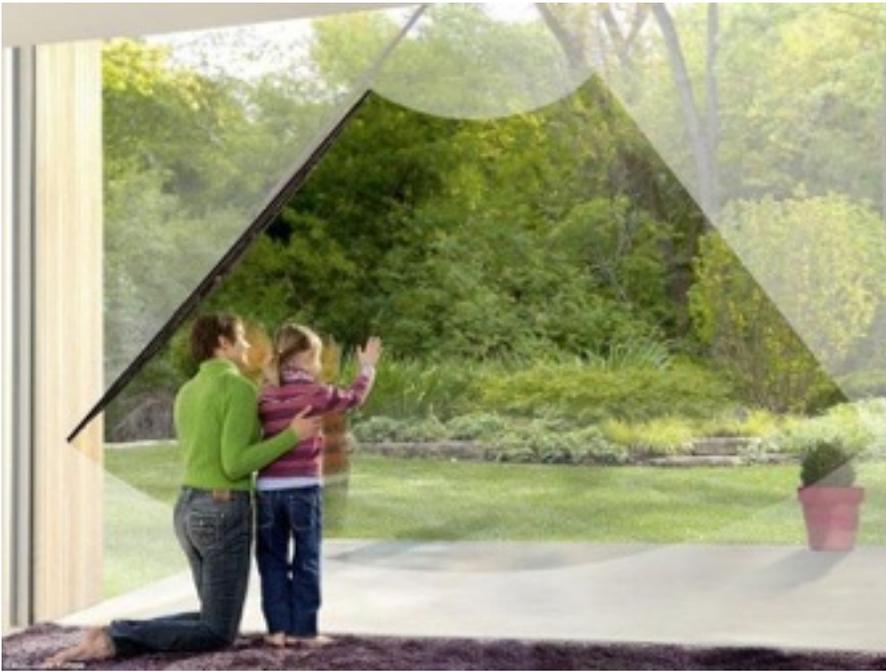
OTHER INFORMATIONS:



Our coatings are permanent and hydrophilic, which allow themselves to be wetted out by water, so means they preventing mist or fog build up. And they are not readily susceptible to saturation, which makes them safe in extremely adverse environments, involving prolonged exposure to water vapor. Ideal for use in eye safety wear.

Military gas masks, fireman's visors, traffic signals and garage forecourt gauge covers are examples. Thus where it is a priority to keep clear vision at all times, CERACOAT anti-fog coating comes into their own.

Anti-fog coatings, also known as non-mist coatings, are indispensable for eye wear and externally located gauges and signs. The advantages of a clear plastic product treated to prevent misting are obvious for many applications involving temperature differences and/or high humidity.



ADVANTAGES:

- ✓ No influence on the appearance of the substrate (Layer thickness: 100-150 nm)
- ✓ Excellent Anti-Fogging properties
- ✓ Solvent free and odorless
- ✓ Hardening at room temperature. No additional energy or UV light required.
- ✓ Pressure wash-resistant (50 - 60 bar)

- ✓ Excellent efficiency with low quantity consumption
- ✓ No color infiltration to coated substrates
- ✓ High temperature-resistance - UV-stable
- ✓ Absolute frost resistance

APPLICATION:

Simple do-it-yourself application makes it suitable for end-customers as well:

1. Industrial: Application using standard HVLP systems
2. Manual: Spray on surface and wait 10 seconds (30 seconds on special coated glasses). Then wipe dry with soft paper (Kleenex, paper tissue. No cotton or microfiber, ONLY PAPER)

This NANO-coating is completely networked and hardened after 1 hour. The anti-fogging effect can only be tested after this hardening phase.

STORAGE STABILITY:

Unopened original containers can be stored for at least 2 years. Recommended storage- and transport temperature: +3 to 30°C

CONSUMPTION: Around 20ml per m²

GENERAL SAFETY AND TESTING INFORMATIONS:

Safety eyewear helps prevent personal injury and from an employer's view point reduces lost time and potential compensation costs.

Recent research by the American Centers for Disease Control and Prevention put workplace eye injuries requiring medical treatment at 2,000 cases every day, with more than 100 of them resulting in one or more lost days of work. The financial cost alone is therefore huge.

In spite of statistical proof that protective eyewear prevents injuries, a further American survey found that nearly 60 percent of injured workers were not wearing eye protection at the time of an accident. Why not? One given reason was fogging of the lenses.

The relationship between anti-fog and the wearing of protective eyewear is well documented. A study published in Accident Analysis & Prevention magazine in 2009 reported on research done with focus groups made up of construction, manufacturing, service and retail workers. All of the groups named fogging as a factor for not wearing safety eyewear, making it number one among vision related reasons.

More than 55% of research respondents suggested an anti-fog solution to increase usage of personal protective eyewear. It was named by more focus groups as a reason to wear safety eye wear than incentives, warning signs, eyewear cleaning stations or as a condition of employment.

The combination of heat and humidity increases the likelihood of fogged safety eye wear, whether glasses, goggles or visors. The humidity creates more moisture, which can form fog. High heat increases worker perspiration, further adding to the moisture problem. That same high heat increases the chance of condensation of the moisture on protective eyewear. Sudden changes in the local working environment also have an effect on fogging.

The cloud of steam pulp and paper workers experience from the paper drying equipment can virtually blind them in an instant. A food processing worker going in and out of chillers can face the same problem. A construction worker or warehouse materials handler who's moving between indoor and outdoor tasks is also at risk.

Workers in full body protective gear or full face shields, including military personnel, riot police, firefighters, hazmat, cleanroom and nuclear utility workers are at higher risk of fogging problems. These closed systems may not allow moisture and heat to adequately dissipate.

And remember - not all anti-fog coatings are the same. CERACOAT anti-fog bonds great on all glass & plastic surfaces and is the next generation of a real anti-fog coating, using one-of-a-kind SWISS ceramic nano technology.