

Chemical Agent Resistant Coatings

More than just a camouflage paint



AkzoNobel

Tomorrow's Answers Today

What is a Chemical Agent Resistant Coating?

In addition to corrosion resistance, durability and camouflage, a chemical agent resistant coating (CARC) also provides protection against chemical and biological attack.

The surface of the coating is engineered in such a way that it resists the absorption of chemical and biological agents. These stay on the surface of the coating, making decontamination after exposure much easier to accomplish. Decontamination is the process of cleansing to remove contamination, or the possibility of contamination. A chemical agent resistant coating should have very good resistance against the decontamination fluids used to flush and neutralize the surface.

Chemical agent resistant coating systems fall under the category of CBRN defense. They are typically applied on land defense vehicles and equipment, but some are suitable for use on military aircraft and helicopters as well.

A new, more advanced temporary coating technology was recently made available for use on land defense vehicles and equipment. In case of contamination, this strippable coating can be peeled-off by an operator wearing suitable protective clothing without damaging the underlying CARC. The new technology absorbs high percentages of chemical agents and holds them within the film, thus reducing the need for decontamination fluids. This chemical agent absorbing coating technology has a number of advantages over traditional CARC. It provides better protection to those operating in or around a vehicle after a chemical attack. The operator removing the coating has minimal exposure since the chemical warfare agents are predominantly in the coating and not diluted and spread by the rinse of the decontamination fluid. This also limits the impact on the environment since chemical agents and decontamination fluids will not be rinsed into the ground. Coatings that are not contaminated can be disposed of as general waste. Another advantage of the strippable coating is in its application flexibility. It can be applied by spray, brush or roller whilst still in theatre, in order to provide a quick color or signature change.



Technology

The resistance against chemical and biological warfare agents and its decontamination fluids requires the highest level of coating integrity. Sophisticated high solids and water based chemical agent resistant coatings are based on highly cross-linked resin systems with the pigmentation selection and ratio tightly controlled. While the coatings are highly cross-linked they are not brittle, which also makes them applicable for use on military aircraft and helicopters.

Challenges and functionalities

For land defense applications it is a goal to engineer a temporary peelable coating with the ability to decontaminate itself after exposure to chemical warfare agents. In the long term 'self-disclosing' coating technology would be the challenge, in order to provide better protection to those operating in or around a vehicle. Such a coating could for example change color to tell you when it is contaminated with a chemical warfare agent.



Chemical Agent Absorbing Coating - Intergard® 10220

Summary

Chemical agent resistant coatings (CARC) provide protection against chemical and biological attack by resisting the penetration of these agents into the coating. CARC's are traditionally rinsed-off with fluids to decontaminate the surface of the military asset. New advanced technology offers a more environmentally friendly peelable coating for land defense application that can be removed quickly and preserves the original underlying CARC finish. The peelable coating absorbs high percentages of chemical agents and provides better protection to those operating in or around the vehicle.

More Information

With a long and successful history of serving all sectors of the armed forces, AkzoNobel is ideally placed to offer advice and specialist coating technology that not only protects and enhances operating image and performance but also adds efficiency and quality during asset construction.

Our specialist products meet the requirements of various coating defense standards and military performance specifications.

For more information on chemical agent resistant coatings and other specialist coatings, contact your local AkzoNobel Aerospace Coatings representative, visit our website at www.akzonobel.com/aerospace or e-mail us at: customer.service@akzonobel.com



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