

SYLOSIV® Molecular Sieve Powder in Metallic and Zinc-rich Paints



Function of SYLOSIV® Powder

In certain paint and coating systems, moisture introduced into the formulation via the raw materials (solvents, pigments, extenders) causes undesirable side effects.

In metallic and zinc-rich paints (such as marine paints for tank ships and yachts), water reacts with the very active metallic pigments such as zinc or aluminium, forming hydrogen. This leads to overpressure in the cans, and in extreme cases to leakage.



This effect can be avoided by the use of SYLOSIV® molecular sieve. It adsorbs the moisture rapidly, with the result that the above reactions can be suppressed, thus reducing returns and storage problems.

How to Determine the Right Quantity of SYLOSIV® Powder

SYLOSIV® is employed for removing traces of water in metallic and zinc-rich paints. The content of water in the pigments naturally fluctuates from batch to batch. To ascertain a sufficient amount of SYLOSIV® powder, the water content of the pigments needs to be measured.

Since SYLOSIV® powder adsorbs about 20 wt% of water, the amount of molecular sieve needed is easy to calculate. The water content of the raw materials can vary considerably from batch to batch; therefore, it is safer to work with an excess of SYLOSIV® molecular sieve powder.

The required proportions of SYLOSIV® powder should be checked through trials. The average amount of SYLOSIV® powder required in the formulation is typically between 0.5 – 2.0 wt%. If assistance is needed, please contact our Technical Sales/Service team.

Addition of SYLOSIV® Powder

Incorporation of micronized SYLOSIV® powders present no problem when they are dispersed together with the other components of the paint by means of a dissolver. The fact that SYLOSIV® zeolite grades in powder form adsorb moisture from the air spontaneously calls for special care in the handling of the powders. The latter have to be stored in hermetically sealed containers and once opened should be used as quickly as possible.

The Right Products for You

SYLOSIV® powders with pore sizes of 3Å or 4Å should be used for this application. This pore size allows water to be adsorbed, but larger organic molecules which often function as ingredients in paint formulations are too large to be adsorbed.

SYLOSIV® A4, SYLOSIV® K300 and SYLOSIV® A3 molecular sieve grades are especially recommended for this application. Although Grace is not aware of any negative interaction with other paint ingredients, the compatibility of the alkaline zeolite powder in the customer's paint formulation should be tested in application trials.

Please contact our Technical Sales/Service support for advice in selecting the most suitable material for your application. Special Product Information Sheets for each grade are available on request.

Grace is a premier specialty chemical and materials company with more than 6000 employees located around the world. Our products are used by millions of people each day. Among many other things, we ensure the integrity of some of the world's major buildings and bridges, enhance the performance of your petroleum products and preserve the safety of your food.

Grace Davison has successfully pre-registered all REACH relevant substances. The next step is the ongoing preparation of the required registration dossiers and final registration of our substances. Grace Davison has already fully registered its synthetic amorphous silica and zeolites. Now our customers can have confidence in REACH compliance and supply security beyond 2010.

Non-EU customers should contact us about their import needs.

World Headquarters

W. R. Grace & Co.-Conn.
7500 Grace Drive
Columbia, Maryland 21044/USA
Tel.: +1 410 531 4000
NA Toll Free: +1 800 638 6014
Fax: +1 410 531 4273

North America

W. R. Grace & Co.-Conn.
62 Whittemore Ave.
Cambridge, MA 02140/USA
Tel.: +1 617 498 4987
Fax: +1 617 498 4433
www.gracedarex.com

Latin America

Grace Brasil Ltda
Rua Albion, 229 - 10o andar, cj 104
Lapa, São Paulo - SP/Brasil
Cep 05077-130
Tel.: +55 11 3133 2704
Fax: +55 11 3133 2706

Europe

Grace GmbH & Co. KG
In der Hollerhecke 1
67545 Worms/Germany
Tel.: +49 6241 403 00
Fax: +49 6241 403 1211

Asia/Pacific

Grace China Ltd.
19th Floor, K Wah Centre
1010 Huai Hai Zhong Road
Shanghai, 200031/ China
Tel.: +86 21 5467 4678
Fax: +86 21 5405 1500

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