



NUCON International, Inc

7000 Huntley Road • Columbus, OH 43229

Ph: 614-846-5710 • Fx: 614-431-0858

www.nucon-int.com

FORMASORB™ Bulletin 11B22

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FORMASORB™

Formaldehyde Adsorbent

Formaldehyde commonly occurs in the decomposition, or as an incomplete reaction product, of many organic polymer compounds. It is also a product of incomplete combustion. Formaldehyde is often one of the causes of the "sick building syndrome". It also frequently occurs in permanent press cloth treatment and in embalming applications. Formaldehyde is very toxic, and is a suspect carcinogen. Formaldehyde is very weakly adsorbed on activated carbon or any other untreated adsorbent. Often, oxidation catalysts are deposited on adsorbents, which convert the formaldehyde to formic acid which is more strongly held by physical adsorption on the adsorbent surfaces than formaldehyde. However, the oxidation product, formic acid is still a toxic compound and it eventually desorbs from oxidant treated adsorbents.

NUCON International, Inc. has developed a highly specific impregnated carbon for formaldehyde removal from air, which does not result in the production of formic acid and does not contain heavy metals, such as the hazardous hexavalent chromium, which is present in some of the oxidant treated formaldehyde adsorbents. The formaldehyde specific non-toxic adsorbent FORMASORB-3 is capable of removing formaldehyde from an air stream at residence times of less than 0.25 seconds while still removing other organic compounds from the air stream. The adsorbent base has high micro and macro porosity permitting long adsorption life. While the product is typically available as 3 mm pellets, other particle sizes can also be made available.

FORMASORB-3 is non-corrosive and can be used in metal or plastic containers in the relative humidity range of 10-95%. Detailed physical properties are listed in the FORMASORB data sheet. For special applications, tailor making of impregnant properties are available.

Spent FORMASORB-3 can be thermally reactivated similar to unimpregnated activated carbon without the release of additional toxic compounds. However it requires reimpregnation at NUCON.

FORMASORB-3 is intended for gas phase applications and, if exposed to liquid water, it can lose impregnant.

Shelf life of unopened drums of FORMASORB stored in a weather-protected area is five years minimum. Standard packaging is 5 cubic feet plastic lined fiber drums (plastic lined steel drum packaging is available).