



# NUCON International Inc

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Bulletin 11B32 – NUSORB CR

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## DESULFURIZATION ADSORBENTS

Hydrogen sulfide can be removed from air streams using impregnated adsorbents. Many of these products require the presence of oxygen and, in some cases the catalytic effect of water vapor, to be effective. However, hydrogen sulfide is frequently present in gas streams that do not contain oxygen, such as feedstock natural gas and inert gases.

NUCON International, Inc. has developed an efficient adsorbent for the removal of hydrogen sulfide, and other organic sulfides or inorganic hydrogen sulfide homologues, from gas streams containing no oxygen. NUSORB® CR™ performs well in non-oxygen containing streams and is an excellent in-place regenerable hydrogen sulfide adsorbent. With approximately 3% by wt. capacity at residence times above 1.25 seconds, it is suitable for the purification of hydrocarbons, nitrogen, helium, etc.

After the bed of carbon becomes loaded with sulfur compounds, it must be regenerated. This is accomplished by raising the temperature of the carbon bed to 450° – 500°F with super heated steam mixed with enough air to give about 0.5 volume % oxygen. In this regeneration step, metallic sulfides are restored to their original oxide state and elemental sulfur is formed, which can be recovered from the condensate.

When high molecular weight organic contaminants are also present it is advantageous to protect the NUSORB® CR™ with a "guard bed" of unimpregnated carbon such as NUSORB® GC50-3™. For more detailed information see the NUSORB® CR-3™ data sheet.

The NUSORB® CR™ adsorbent is noncorrosive. While the standard product is available in specially selected 3mm pellets, it is also available in other particle sizes.

The shelf life of unopened drums stored in weather-protected areas is a minimum of 10 years. Standard packaging is in 5 cubic foot plastic lined fiber drums (plastic lined steel drums are available).