Solution for Cryogenic Applications

The need to store and transport goods and products under cryogenic conditions is common to a wide range of industrial fields, encopassing the pharmaceutical, the semiconductor, the medical and homecare sectors. Laboratory and research activities in biotechnologies or superconductivity also require large use of cryogens.

SAES Getters has developed over the years a range of materials, devices and solutions to address the requirements of the different applications.

Standard products, as well as tailor made solutions, are available for keeping the vacuum in dewars, tanks, pipes or cryogenic cables.

Cryogenic Dewars

Cryogenic dewars are used for low pressure transport and storage of liquid nitrogen, helium and oxygen as well as biological samples or superconductive magnets.

The operational concept of the cryogenic dewars is very similar to that of the vacuum bottles, with an inner and outer shell in between which the vacuum provides the thermal insulation. SAES NEGs are used to maintain pressures of around 10^{-5} to 10^{-4} Torr in the evacuated jacket of the dewar.

SAES Getters has developed tailor made and cost effective solutions for this specific application, which requires bulk quantity of material because of the large volume of the vacuum chamber. The St2002 Pieces are used in the cryogenic dewars that are not intended for liquid oxygen service.

For liquid oxygen transportation and storage a new getter material, Lothar, has been specifically developed to remove hydrogen for the evacuated jacket of cryogenic dewars.

Boost your product performance with SAES Getters solutions:

- St2002 Pieces
- Lothar

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Solution for Cryogenic Applications

Cryogenic Tanks

The storage of bulk quantity of liquid gases, such as nitrogen, argon and oxygen, for industrial applications requires the use of big cryogenic tanks. Despite the need to be thermally insulated, these tanks are often installed in non sheltered areas and therefore maintaining the necessary vacuum insulation is a challenging tasks. In fact, due to the dimensions of the vessel water condensing on the inner wall and hydrogen outgassing from the outer wall are quite significant.

SAES Getters has developed various solutions to improve and maintain the required vacuum insulation conditions over time. A family of getter materials in the form of St2002 Pieces, having various shapes and configurations, are offered for all gases, but oxygen. For servicing liquid oxigen tanks and vessels a different product is proposed, called Lothar, which can sorb large quantities of H_2 and keep very good insulation values.

Lothar is intrinsically safe even in case of contact with oxigen, being based on a specially developed metal oxyde formulation.

Boost your product performance with SAES Getters solutions:

- St2002 Pieces
- Lothar

Cryogenic Pipes

Cryogenic pipes find their application when the liquefied gas at high pressure needs to be transported from one vessel to another. Examples are the filling of a cryogenic tank or the filling of the reservoirs for spacecrafts, the transport of liquefied gas from the reservoirs to the shipping vessels. In some medical applications, the distribution of oxygen is carried out with a cryogenic piping system for safety issues.

For all these application SAES Getters offers dedicated solutions, specific to the transported fluid. The newly developed Lothar is more suitable for liquid oxygen piping system, while the St2002 Pieces are proposed for the other gases.

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- Lothar

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