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innovative gasketing and sealing solutions.™

TECHNICAL DEPARTMENT COMMUNICATION

Bulletin No.: OXY- 001 (Document Circulation: √ General; √ Distributor; _ Internal & confidential)

PRODUCT: All *INERTEX*® 100% Expanded PTFE Products

SUBJECT: Liquid and Gaseous Oxygen Service

In selecting gaskets for oxygen service, one important consideration is to minimize the probability of ignition and the risk of fire. ASTM has established guidelines for such selection in ASTM G63, *Standard Guide for Evaluating Non-metallic Materials for Oxygen Service*. The preferable properties include: high auto-ignition temperature, low heat of combustion, high resistance to impact, and high oxygen index.

Auto-ignition temperature is the minimum temperature that a material will spontaneously ignite, when heated in a pressurized vessel filled with pure oxygen. Heat of combustion is the heat generated when a material is completely burned in pure oxygen. Resistance to impact test measures the resistance of a material to impact when immersed in pure liquid oxygen (L_{ox}). Oxygen index is the minimum oxygen concentration required in support of a flame. However, the oxygen index is not the maximum oxygen concentration which the material can withstand, as many people mistakenly think.

The following table summarizes the ASTM's suggested values for acceptance for the gaskets in oxygen service, and ***INERTEX***® products far exceed these criteria.

Criteria	ASTM	ASTM G63 Values	*INERTEX*®
Auto-ignition Temperature	G72	> 752°F (400°C)	> 839°F (448°C)
Heat of Combustion	D4809	< 2000 cal/g (3600 Btu/lb)	< 1534 cal/g (2761 Btu/lb)
Impact Test	D2512	No Reactions	No Reactions
Oxygen Index	D2863	> 23% O_2	≥ 94.5% O_2

Based on the above information, INERTECH Inc. has rated ***INERTEX***® **products suitable for gaseous oxygen and liquid oxygen (L_{ox}) services up to 3000 psig and a maximum temperature of 600°F.** Please follow Inertech's standard procedures for the desired tightness of sealing. For further guidance about oxygen service, please refer to ASTM G63.

The following table describes the relevant ordering information:

INERTEX® **Product**	**How to order**
Inertex® SQ-S Gasket Sheet	Order Oxygen Grade
Inertex® SQ-S Gasket Tape	Order Oxygen Grade w/o adhesive
Inertex® UHF Joint Sealant	Order w/o adhesive
Inertex® UHF Gasket Tape	Order w/o adhesive
Inertex® EZ-Seal Gaskets	Order Oxygen Grade
Inertex® Valve Stem Packing	Order as usual
Inertex® Thread Seal Tape	Order as usual

PREPARED BY: Inertech, Inc. **DATE: May 20, 2019**