

Compatibility Guide

Fyrquel® Fire-Resistant Fluids & Lubricants

INTRODUCTION

ICL-IP has developed a summary of compatible materials of construction. Proper care in ordering components and replacement parts that are compatible with triaryl phosphate ester fire resistant fluids is essential. Component manufacturers and suppliers are familiar with the requirements of phosphate esters and compatible materials are readily available. The below recommendations are general in nature. Compatibility testing with compounded products is recommended to assure in-service performance.

ELASTOMER AND HOSE COMPATIBILITY

Material	Compatible	Material	Not Compatible
Butyl	to 225 deg F	Nitrile; Buna-N	Not Recommended
Fluorocarbon ⁽¹⁾	to 300 deg F	Neoprene	Not Recommended
EPR; EPDM	to 300 deg F	Polyurethane	Not Recommended
PTFE ⁽²⁾	to 350 deg F	Ethylene Acrylic	Not Recommended
Silicone Rubber	to 350 deg F	Natural Rubber	Not Recommended
Nylon	to 250 deg F	Polyacrylates	Not Recommended
Engineered Resins	contact supplier	Acetal Resin	Not Recommended

(¹) Viton®; Kalrez®; Fluoroel®
 (²) Teflon®

WIRE INSULATION

Insulated wire requires an outer coating of material resistant to phosphate esters. The materials usually specified are nylon, silicone rubber, polyethylene, polypropylene, and Teflon® polymers. Polyvinyl chloride (PVC) is not recommended as an outer coating.

FILTERS

A variety of standard filters can be employed to maintain phosphate esters. The fluids are compatible with most common filter media such as paper, cellulose, synthetic fiber, and metals. However, when using filters, care must also be taken that seals, coatings, and adhesives are compatible with the fluid.

METALS

Phosphate esters have little effect on metals they may contact in operating systems, and are compatible with all metals. One of the most commonly used materials of construction compatible with phosphate esters is carbon steel. In adverse environments such as chlorine or caustic applications, the use of stainless steel should be considered.

PAINTS AND COATINGS

Standard paints and coatings are not compatible with phosphate esters. However, certain polyurethane and two-component catalyzed epoxy finishes are generally resistant. ICL-IP recommends that all interior tank surfaces remain uncoated. Fyrquel® fluids passivate metal surfaces while preventing corrosion.

SOLVENTS AND CLEANERS

For cleaning or removal of phosphate esters from equipment or clothing, or in general maintenance, non-chlorinated solvents are recommended. Mineral spirits or isopropyl alcohol may be used in certain conditions.

PIPE SEALING COMPOUNDS

Failure to use compatible compounds can result in leakage of phosphate ester fluid, foaming, or fragmentation of sealing materials, which can clog filters or plug control valves. Please consult the manufacturing companies for their materials that can be utilized in the presence of triaryl phosphate esters. Silicone, butyl, or fluorocarbon based sealants are frequently used.

OTHER HYDRAULIC FLUIDS

Mixing of phosphate ester fluids with other types of hydraulic fluids is not recommended. This may cause elastomer incompatibility, foaming, and reduced fire resistance. Water containing fluids are not compatible with phosphate esters and should never be mixed. Before mixing products, please contact your ICL-IP Representative.

For more information about our products and to place an order, please contact your nearest ICL-IP regional sales office:

AMERICAS REGIONAL SALES OFFICE

ICL-IP America Inc.
622 Emerson Road, Suite 500
St. Louis, Missouri 63141-6742 USA
Tel: 800-666-1200
Fax: 314-983-7607

ASIA PACIFIC REGIONAL SALES OFFICE

ICL China
93 Huai Hai Zhong Road #905-909
Shanghai 200021, China
Tel: 021-53863336
Fax: 021-53863336

EUROPEAN REGIONAL SALES OFFICE

ICL-IP Europe BV
Fosfaatweg 48 1013 BM Amsterdam
P.O. Box 465 1000 AL Amsterdam, Netherlands
Tel: (31) 20 800 5800
Fax: (31) 20 800 5805

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions as to the merchantability or fitness of the product for any particular purpose, or that any suggested use will not infringe any patent. Nothing herein shall be construed as granting or extending any license under any patent. Buyer must determine for itself, by preliminary tests or otherwise, the suitability of this product for its purposes, including mixing this product with other products. The information contained herein supersedes all previously issued bulletins on the subject matter covered.