

DuPont™ Vespel® Pump Reliability Technology

VESPEL® CR-6100 WEAR COMPONENTS FOR GAS PROCESSING PLANT PUMPS



Gas Processing Plants

Gas plants purify the raw natural gas extracted from underground. Raw natural gas typically consists primarily of methane (CH₄) but with impurities like heavier gaseous hydrocarbons, acid gases, water, liquid hydrocarbons and mercury. Critical pumps that enable the operation of the plant include Boiler Feed-Water, Cooling Tower, Lean Amine, High Pressure Semi Lean and Semi Lean Booster services.

Challenge

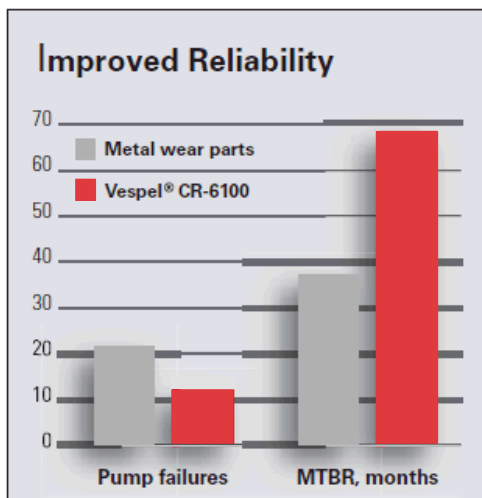
Metallic wear components usually found on critical rotating equipment can contact when pumps run dry leading to frequent seizures and costly repairs which reduces plant uptime. Although some non-metallics are used to reduce run dry situations, many have chemical compatibility issues with some services including Amines.

Solution

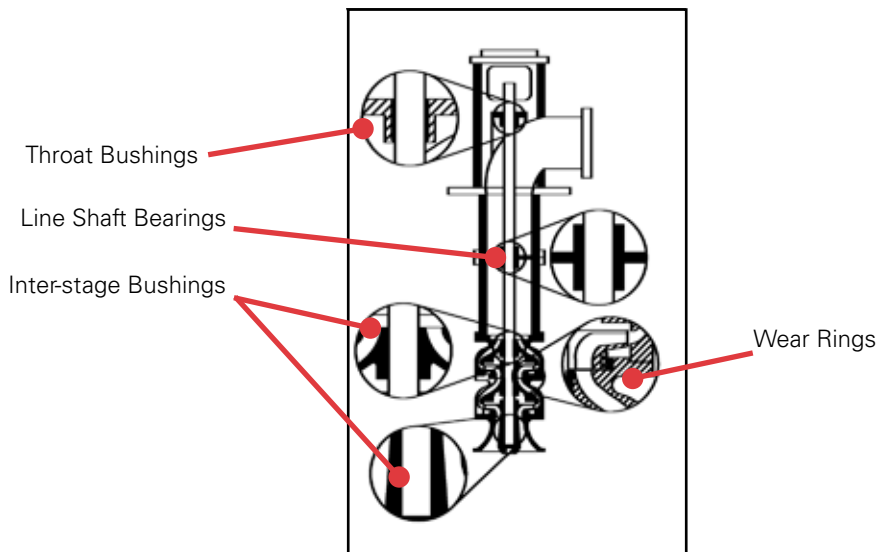
DuPont™ Vespel® CR-6100 pump wear rings, bushings and bearings are compatible with amines and other chemicals used in gas plants. In addition, its low coefficient of friction and low wear enables increased mean time between repairs (MTBR) and reduces run dry seizures and failures which translates into lower operating costs.

Other potential services include oxygen removal, O₂ (degrades amine), arsenic removal, water removal and cavern injection pumps.

For technical support,
material samples, or
a machining guide, call
1-800-222-VESP (8377)
www.vespel.dupont.com



One refinery's experience after 68 months cumulative population run time after conversions from metal wear parts to Vespel® CR-6100 pump components



Vespel® CR-6100 parts installed in vertical pump.



The miracles of science™

Broad Chemical Resistance*

Acids	Vespel® CR-6100	PEEK
Aqua Regia	A	C
Chromic Acid >50%	A	D
Chlorosulfonic Acid	A	D
Sulfuric Acid, 96%	A	D
Phosphoric Acid, 85%	A	B
Fluoboric Acid	A	D
Fluorosilicic Acid	A	D
Hydrofluosilicic Acid	A	D
Nitric Acid	A	D
Solvents		
Acetone	A	C
Ketones	A	C
Tetrahydrofuran	A	N/A
Methyl Acetone	A	C
Methyl Ethyl Ketone	A	C
Methyl Isobutyle Ketone	A	C
Dimethyl Sulfoxide	A	N/A
Oleum	A	D
Other		
Bromine	A	C
Sodium Hydroxide	A	C
Aq Zinc Chloride, 25%	A	N/A
Caustic Soda	A	C
Caustic potash	A	C
Chlorinated Water	A	D
Oxygen	A	D
Steam	A	A
Iodine	A	D
Oleum	A	D

Explanation of Ratings

A = Excellent, B = Good, C = Poor, D = Do not use

* Source: Chemical Resistance Guide for Plastics. Compass Publication

DuPont™ Vespel® CR-6100 parts and shapes are polymeric composite articles consisting of PFA/CF reinforced composite, 20 % mass fraction random X-Y oriented carbon-fibre.

Phone: 800-222-VESP (8377)

Fax: 302-999-2311

E-mail: web-inquiries.DDF@usa.dupont.com

Web: vespel.dupont.com

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. The data listed herein falls within the normal range of product properties but they should not be used to establish specification limits or used alone as the basis of design. This information may be subject to revision as new knowledge and experience becomes available. Since we cannot anticipate all variations in actual end-use conditions, DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102.

Copyright © 2009 DuPont. The DuPont Oval Logo, DuPont™, The miracles of science™, and Vespel® are registered trademarks or trademarks of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

K-22694 (11/18/09 rev-3) Printed in the U.S.A.



The miracles of science™