Application Profile

DuPont™ Vespel® Pump Reliability Technology

Vespel® CR-6100 Wear Components for Gas Processing Plant Pumps

Gas Processing Plants

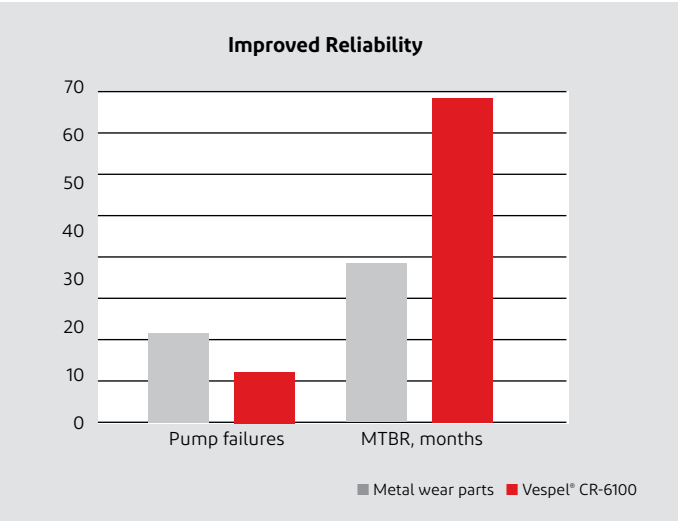
Gas plants purify the raw natural gas extracted from underground. Raw natural gas typically consists primarily of methane (CH_4) but with impurities like heavier gaseous hydrocarbons, acid gases, water, liquid hydrocarbons and mercury. Critical pumps that enable the operation of the plant include Boiler 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 nonmetallics 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, O_2 (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)

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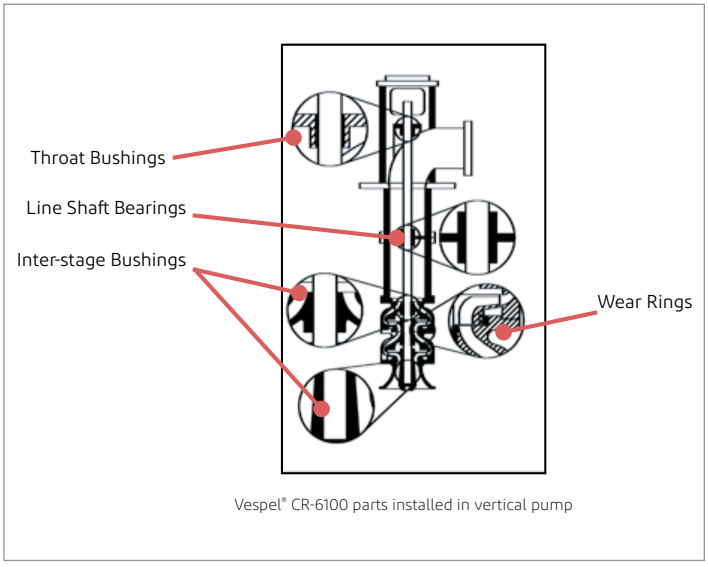

Vespel® CR-6100 parts installed in vertical pump

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

Acids	Vespel® CR-6100	PEEK
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.

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