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List of approved Compressor Cleaning Products for Alstom Gas Turbines

Document electronically released

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1 Introduction

The following list indicates the products, which are tested in the laboratory for compressor off- and on-line cleaning of the gas turbine types GT8, GT9, GT11, GT13, GT24 and GT26.
 These products meet the requirements of cleaner specifications as described in [1]. Further, they are suitable to be forwarded and injected through Alstom cleaning systems and nozzles.

2 Cleaning Product

The following products have been tested in our laboratory and show compliance with our requirements regarding purity, operability and environmental aspects. The test results must not be considered as acknowledgement of the product ability to efficiently clean the compressor blading.

Alstom reserves the right to break off the approval in cases of duly ascertained quality failure of commercial deliveries or considerable impairment of regular gas turbine operation.

2.1 Standard Cleaning Product

Product name	Manufacturer / Supplier
Turbotect 950 (water based)	Turbotect Ltd., Postfach 1411, Badstrasse 15 (Mäderhof), CH-5401 Baden, Switzerland Tel. +41 56 200 50 20, Fax +41 56 200 50 22 turbotect@turbotect.com mailto: turbotect@turbotect.com

2.2 Alternative Cleaning Products

Product name	Manufacturer / Supplier
ARDROX 6377 (water based)	Chemetall GmbH, Aerospace Technologies, Mr. J. Pielmeier, Trakehner Str.3, D-60487 Frankfurt a. M. [Germany] Tel. +49 6971652253 www.aerospace.chemetall.com
CleanBlade GTC1000 (water based) ¹	GE Betz, 4636 Somerton Road, Trevose, PA [USA] Tel. +1 215-953-5533, Fax +1 215-953-2447
Conntect 5000 (water based)	Conntect Inc., 332 Federal Road, Brookfield, CT [USA] Tel. +1 203-775-8445, Fax +1 203-775-9339
GTC Frostex (water based)	Skyline Technologies BV, Mient 201, 2564KL Den Haag, [Netherlands] Tel +31 70 3232060, Fax +31 70 3232635
Fyrewash F1 (solvent based) Fyrewash F3 (water based)	Rochem Technical Services (Europe) Ltd., 16 Sydney Mews, London SW3 6HL [England] Tel. +44 171 589-3242, Fax +44 171 589-2891
Power Guard (water based) ²	R-MC Power Recovery Ltd., 6 Stamford Business Park, Ryhall Road, Stamford, Lincolnshire, PE9 1XT [UK] Tel. +44 1780 762555, Fax +44 1780 762599
Protoklenz GT (water based)	Minco UK Ltd., Mr. Bob Gronski, 6 Castle Rise, London Road, Stroud GLOS GL5 2AW [UK] Tel. +44 1435 764 149
Techniclean GT (water based)	Castrol Technology Centre, Whitchurch Hill, Pangbourne, Reading, Berkshire RG8 7QR [UK] Tel. +44 1734 765394/843311, Fax +44 1734 841254/845516
Turbotect 927 (solvent based)	Turbotect Ltd., 5401 Baden, Switzerland, see above
Turbotect 2020 (water based)	Turbotect Ltd., 5401 Baden, Switzerland, see above
Turbo-K (water based)	Turbomachinery Consultants GmbH, Mr. O. Platz, Wiesenstrasse 57, D-79312 Emmendingen [Germany] Tel. +49 7641-55346, www.fpturbo.com , mailto: fpturbo@t-online.de
ZOK 27 (water based)	ZOK International Group Ltd., Elsted, Midhurst, West Sussex, GU29 0JT [UK] Tel. +44 1730 811920, Fax +44 1730 811930

¹ not recommended for on-line cleaning

² not released for GT24 and GT26.

Since the injection system of R-MC is not approved by ALSTOM Power, this cleaner has to be forwarded and injected through the ALSTOM Power cleaning systems and nozzles

3 Anti freeze

Anti freeze agents have to fulfil the same requirements concerning purity and stickiness properties as the cleaning agents.

If the operator uses an organic solvent as anti freeze agent like alcohols (methanol, ethanol, or isopropanol), he has to adhere to local regulations concerning operational security. Alstom takes no responsibility for explosion protection or product incompatibilities.

3.1 Standard Anti Freeze Product

Product name	Manufacturer / Supplier
Turbotect ARF-301 (propylene glycol based)	Turbotect Ltd., Postfach 1411, Badstrasse 15 (Mäderhof), CH-5401 Baden, Switzerland Tel. +41 56 200 50 20, Fax +41 56 200 50 22 turbotect@turbotect.com mailto: turbotect@turbotect.com

3.2 Alternative Anti Freeze Product

Product name	Manufacturer / Supplier
GTC Frostex	Skyline Technologies BV, Mient 201, 2564KL Den Haag, Netherlands, Tel +31 70 3232060, Fax +31 70 3232635

4 Other Products

4.1 Not Tested Products

ZOK mx (ZOK International) , Conntect AF-100 antifreeze

4.2 Disapproved products

CONNTECT 7000, TURCO 6783-50, TURCO 5884, Fyrewash F2 (Rochem), ARDROX 6345 (Brent), Power Back (R-MC)

5 New product evaluation

For the laboratory testing of a new compressor cleaner, the supplier shall submit a 2 L sample to Alstom gas turbine technical department. These tests have to be paid by the manufacturer.

6 References

- [1] HTCT600686 Specification for Compressor cleaning Products and Water Quality