



Certificate of Conformity

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Product designation

Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system
(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Tyco Fire Protection Products
Level 3, 95 Coventry Street, SOUTHBANK, VIC, AUSTRALIA, 3006

Registrant

Tyco Fire Protection Products
Level 3, 95 Coventry Street, SOUTHBANK, VIC, AUSTRALIA, 3006

Producer

Ansul Incorporated
One Stanton Street, MARINETTE, WI, UNITED STATES, 54143-2542

Conformance criteria and evaluation

The Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 4214-2002, 'Gaseous fire extinguishing systems'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. The Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system is listed for use only where the ambient temperature of the storage cylinders will be between 0°C and 54°C. System design and installation shall be done strictly in accordance with the ANSUL®, INERGEN® System Design, Installation, Recharge and Maintenance Manual (with Australian Addendum), Revision 1 March 1999 (ANSUL® p/n 416655), and agent reticulation pipework sizing and layout shall be designed only by use of ANSUL® INERGEN® 200 bar Flow Calculation Software, Ver. 2.02, 23 Feb. 1999.
- ii. Enclosure venting shall be provided and designed to ensure that, when the system is discharged, the pressure within the enclosure can not become harmful to the enclosure or its occupants.

This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

Issued by

David Whittaker
Executive Officer – ActivFire Scheme



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Producer's description

The Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system is an engineered gaseous total-flooding type fixed fire protection system which extinguishes fire by using a patented blend of inert gases to dilute the oxygen content of the air within the risk enclosure. The inert gas blend is marketed by Tyco International Pty Ltd as "INERGEN®" (IG-541), and is a mixture of nitrogen, argon and carbon dioxide in the approximate percentages of 52, 40, and 8 respectively. As these gases occur naturally in the atmosphere, accidental and deliberate releases of IG-541 do not contribute to global atmospheric warming or ozone depletion. IG-541 is particularly suitable for use in occupiable areas because the recommended extinguishing concentrations result in an atmosphere within the protected enclosure which can be breathed for a prolonged period with no risk to health and little if any discomfort.

The Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system covered by this Product Listing Data Sheet is quite similar to the listed ANSUL®, INERGEN® 150 bar system (afp - 718) except that the IG-541 agent is stored at 200 bar, the storage cylinders, discharge valves, other control valves, and manifold piping, being stronger than those of the 150 bar system and otherwise suitable for the higher agent pressure. Overall design, and pipe sizing, of the agent reticulation pipework for the 200 bar system is done with the aid of a computer software program which is similar to that for the 150 bar systems, but allows for the slightly different flow and pressure decay performance due to use of considerably higher storage pressure. The principal reason for development of the 200 bar ANSUL®, INERGEN® equipment was to reduce the number of storage cylinders compared to using 150 bar storage pressure and hence to achieve a significantly lower installed cost and smaller space requirement for housing the cylinders.

Technical specification

The following details are a representative extract of the technical specification for the Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

The components of the Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system that have been evaluated and form part of this listed system include the following:

ANSUL (Tyco) part num.	Description	Drawing num. (rev.)
(IGO80H)	Storage Cylinder, 80 litre WC, 300 bar T.P. (WorkCover Approved)	
(IGVAL200)	Discharge Valve, Australian Version (ANSUL p/n 426679)	426679(3)
(IGCAPCV90)	Transport Collar, Storage Cylinder (Valve-Protection Collar)	IGCAPCV90(0)
423684	Electric Actuator for CV-98 Discharge Valve (suits IGVAL200)	423550(13)
423309	Mechanical Actuator, Local Manual Type w/- Locking Pin, for CV-98 Discharge Valve	423309(1)
423310	Mechanical Actuator, Local Manual Type w/o Locking Pin, for CV-98 Discharge Valve	
423311	Mechanical Actuator, Remote Cable-pull Type, for CV-98 Discharge Valve	423311(2)
423568	Discharge Hose Assembly c/w check (200 bar)	423568(1)
831809	Stainless Steel Actuation Hose Assembly, 406 long.	
832335	Stainless Steel Actuation Hose Assembly, 508 long.	
832336	Stainless Steel Actuation Hose Assembly, 609 long.	
(IGORIF025)	Pressure Reducing Orifice Assembly, 25NB	
(IGORIF032)	Pressure Reducing Orifice Assembly, 32NB	
(IGORIF040)	Pressure Reducing Orifice Assembly, 40NB	
(IGORIF050)	Pressure Reducing Orifice Assembly, 50NB	
(IGNOZ015)	Discharge Nozzle, 360° pattern, 15NB, ANSUL p/n 417362	
(IGNOZ025)	Discharge Nozzle, 360° pattern, 20NB, ANSUL p/n 417364	
(IGNOZ032)	Discharge Nozzle, 360° pattern, 32NB, ANSUL p/n 417365	
(IGNOZ040)	Discharge Nozzle, 360° pattern, 40NB, ANSUL p/n 417366	
(IGNOZ050)	Discharge Nozzle, 360° pattern, 50NB, ANSUL p/n 426155	
(IGNOZ065)	Discharge Nozzle, 360° pattern, 65NB, ANSUL p/n 426156	
(IGNOZ080)	Discharge Nozzle, 360° pattern, 80NB, ANSUL p/n 426137	
(IGNOZS15)	Discharge Nozzle, 180° pattern, 15NB, ANSUL p/n 426140	
(IGNOZS25)	Discharge Nozzle, 180° pattern, 25NB, ANSUL p/n 426142	
(IGNOZS32)	Discharge Nozzle, 180° pattern, 32NB, ANSUL p/n 426143	
(IGNOZS40)	Discharge Nozzle, 180° pattern, 40NB, ANSUL p/n 426157	

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ANSUL (Tyco) part num.	Description	Drawing num. (rev.)
(IGNOZS50)	Discharge Nozzle, 180° pattern, 50NB, ANSUL p/n 426144	
(IGNOZS65)	Discharge Nozzle, 180° pattern, 65NB, ANSUL p/n 426145	
(IGNOZS80)	Discharge Nozzle, 180° pattern, 80NB, ANSUL p/n 426146	
417708	Deflector Shield, Discharge Nozzle, 15NB	
417714	Deflector Shield, Discharge Nozzle, 25NB	
805156	Pressure Trip	
423923	Cylinder Pressure Test Assembly	
840309	Header Vent Plug	
842175	Pressure Bleeder Plug	
(73AEB03177)	Cylinder Front Bracket	
(73AEB03207)	Cylinder Rear Bracket	
416655	ANSUL® INERGEN® System Design, Installation, Recharge and Maintenance Manual, (with Australian Addendum)	Revision March 1, 1999
ANINU200	ANSUL® INERGEN® 200 bar Flow Calculation Software	Ver. 2.02 23 Feb. 1999

Piping requirements:

Two types of piping shall be used in an Ansul®, Inergen® 200 bar, inert gas total-flood type extinguishing system:

1. **High pressure** piping, extending from the storage cylinders to the pressure reducing orifice. This shall be suitable for a working pressure of at least 23.0 MPa and shall be Class 2 or 3, Pipe Grade B, in accordance with AS 4041. Minimum thickness of pipe wall shall be in accordance with BS 1600 and ANSI/ASME B36.10M. Welding shall be by Certified Code Welders only. Welded flanges shall be to ANSI/ASME B16.5 Class 900 lb, AS 2129 Table T. Butt-welded fittings shall be to ANSI/ASME B16.9 or BS 1640 Classes 1 and 2 (Standard weight = Schedule 40. Extra strong = Schedule 80). Screwed fittings shall be DN50 maximum, and shall be 3000 lb fittings to BS 3799 or ANSI B16.11.
2. **Low pressure** piping, extending from the pressure reducing orifice to the nozzles. This shall be suitable for a working pressure of at least 11.5 MPa and shall be Class 2 or 3, Pipe Grade B, in accordance with AS 4041. Minimum thickness of pipe wall shall be in accordance with BS 1600 and ANSI/ASME B36.10M. Welding shall be by Certified Code Welders only. Welded flanges shall be to ANSI/ASME B16.5 Class 600 lb, AS 2129 Table K. Butt welded fittings shall be to ANSI/ASME B16.9 or BS 1640 Classes 1 and 2 (Standard weight = Schedule 40; Extra strong = Schedule 80). Screwed fittings shall be DN50 maximum, and shall be 3000 lb fittings to BS 3799 or ANSI B16.11.