



INERIS

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK
- decree nr 90-1089, 7 December 1990 -
- order from the Minister of Industry, 20 December 1996 -

EXPLOSIVES FOR CIVIL USES

- 1 - ADDITION C3 TO THE EC TYPE-EXAMINATION CERTIFICATE
- 2 - **0080.EXP.05.0046**
- 3 - This certificate is relating to the following product:
Shaped charges CE Type 1501 (28 items referenced in the table)
- 4 - This product is manufactured by:
TITAN ENERGETICS
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

The applicant for the examination is:
TITAN ENERGETICS
A Division of Titan Specialties Ltd.
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

represented in the European Union by:
SPECIAL CARGO SERVICES BV
Breguetlaan 7, Sky Park, Oude Meer
P.O. Box 75709
1118 ZT Schiphol Airport
The Netherlands
Attn: Mr. Hubert den Dikken
Phone: 31 (0) 20-655 6262

- 5 - The above named product is specified in the enclosed appendix.
- 6 - The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 6.2 of the Council Directive 93/15/EEC, 5 April 1993, testifies that:
The above named product model is recognized to conform to Essential Safety Requirements as defined in annex I of that Directive.
- 7 - In addition to the EC type-examination (module B) defined in annex II of the Directive, the applicant has retained the assessment of the Conformity to type (module C) defined in the same annex.
- 8 - **This addition is to be attached to the certificate 0080.EXP.05.0046, dated December 9, 2005.**



Verneuil-en-Halatte, September 2, 2008
The Chief Executive Officer of INERIS
By delegation, the Certification Division, Manager

C. MICHOT



INERIS

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK
- decree nr 90-1089, 7 December 1990 -
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Appendix to the addition C3 to the EC type-examination certificate nr 0080.EXP.05.0046

A1 - PRODUCT NAME : Shaped charges named CE Type 1501
28 items referenced in the table

A2 - PRODUCT DESCRIPTION:
general identification:

- family : shaped charge
- sub-family : shaped charge, open
- explosive type / mass : see table
- diameter : see table
- height : see table
- total mass : see table
- manufacturer's references : see table

characteristics:

- mean penetration in concrete target : see table

general conditions:

- shelf life : 10 years
- limit temperature for use : see table
- limit temperatures/hygrometry for storage : - 30°C / + 60°C / 90 % RH max

A3 - DOCUMENTATION:

	reference	date	origin
- examination report	: DCE-2003-43529- JMo/ST-Ag CE 5/12	25/03/2003	INERIS

A4 - PARTICULAR CONDITIONS FOR USE:

as specified by TITAN COMPLETION PRODUCTS in the oil well industry

A5 - MARKING:

- CE and symbol of Notified Body : in conformity with paras 1 and 4 of module C in annex II of the Directive
- others : batch number, certificate nr



Appendix to the addition C3 to the EC type-examination certificate nr 0080.EXP.05.0046

Shaped charges CE Type 1501

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max. Hours
CHARGE 1G IIMX DONOR	LTD-1010-400	IIMX	1.0	12.7	0.5	25.4	1.0	16.4	16.5	0.65	204	1
CHARGE 1G IINS DONOR	LTD-1010-500	IINS	1.0	12.7	0.5	25.4	1.0	16.4	16.5	0.65	260	1
CHARGE 1-1/8" 1.8G IIMX DP RTG	RTG-1302-400	IIMX	1.7	19.9	0.8	22.4	0.9	24.0	132.1	5.2	204	1
CHARGE 1-9/16" 3.2G RDX RTG	RTG-1603-300	RDX	3.2	24.1	1.0	26.5	1.0	45.7	139.7	5.5	162	1
CHARGE 1-9/16" 3.2G RDX BH RTG	RTG-1603-310	RDX	2.5	24.1	1.0	26.5	1.0	42.8	73.7	2.9	162	1
CHARGE 1-9/16" 3.2G RDX SDP RTG PRO	RTG-1603-320T	RDX	2.7	24.1	1.0	26.5	1.0	42.8	233.7	9.2	162	1
CHARGE 1-9/16" 3.2G IIMX RTG	RTG-1603-400	IIMX	3.2	24.1	1.0	26.5	1.0	45.7	139.7	5.5	204	1
CHARGE 1-9/16" 3.2G IIMX BH RTG	RTG-1603-410	IIMX	2.5	24.1	1.0	26.5	1.0	42.8	71.1	2.8	204	1
CHARGE 1-9/16" 3.2G IIMX SDP RTG PRO	RTG-1603-420T	IIMX	2.9	24.1	1.0	26.5	1.0	48.8	241.3	9.5	204	1
CHARGE 1-9/16" 3.2G IINS SDP RTG PRO	RTG-1603-520T	IINS	2.7	24.1	1.0	26.5	1.0	48.8	198.1	7.8	260	1
CHARGE 2-1/8" 6.5G RDX BH RTG	RTG-2106-310	RDX	5.0	24.1	1.2	34.3	1.4	86.2	81.3	3.2	162	1
CHARGE 2-1/8" 6.5G RDX SDP RTG PRO	RTG-2106-320T	RDX	5.5	24.1	1.2	34.3	1.4	96.7	431.8	17	162	1
CHARGE 2" 6.5G RDX SDP GUNSLINGER	RTG-2106-321T	RDX	6.5	24.1	1.2	34.3	1.4	95.4	505.5	19.9	162	1
CHARGE 2" 6.5G RDX GH OUTLAW	RTG-2106-331	RDX	6.5	24.1	1.2	34.3	1.4	48.1	251.5	9.9	162	1
CHARGE 2-1/8" 6.5G IIMX DP RTG PRO	RTG-2106-420T	IIMX	5.5	31.5	1.2	34.3	1.4	96.7	449.6	17.7	204	1
CHARGE 2" 6.5G IIMX SDP GUNSLINGER	RTG-2106-421T	IIMX	6.5	24.1	1.2	34.3	1.4	95.4	513.1	20.2	204	1
CHARGE 2" 6.5G IIMX GH OUTLAW	RTG-2106-431	IIMX	6.5	24.1	1.2	34.3	1.4	48.1	269.2	10.6	204	1
CHARGE 2-1/8" 6.5G IINS SDP RTG PRO	RTG-2106-520T	IINS	6.5	31.5	1.2	34.3	1.4	96.7	360.7	14.2	260	1
CHARGE 2" 6.5G IINS SDP GUNSLINGER	RTG-2106-521T	IINS	6.5	24.1	1.2	34.3	1.4	95.4	396.2	15.6	260	1
CHARGE 2" 6.5G IINS GH OUTLAW	RTG-2106-531	IINS	6.0	24.1	1.2	34.3	1.4	48.1	188.7	7.4	260	1
CHARGE 2-1/2" 11G RDX DP PRO	RTG-2511-301	RDX	10.0	37.6	1.5	43.0	1.7	145.5	279.4	11	162	1
CHARGE 2-1/2" 11G RDX BH BRASS	RTG-2511-310B	RDX	10.0	37.6	1.5	43.0	1.7	130.9	101.6	4	162	1
CHARGE 2-1/2" 11G RDX SDP PROEX	RTG-2511-322T	RDX	10.0	37.6	1.5	43.0	1.7	158.5	619.8	24.4	162	1
CHARGE 2-1/2" 11G IIMX DP PRO	RTG-2511-401	IIMX	11.0	37.6	1.5	43.0	1.7	146.2	406.4	16.0	204	1
CHARGE 2-1/2" 11G IIMX BH	RTG-2511-410B	IIMX	10.0	37.6	1.5	43.0	1.7	130.9	101.6	4	204	1
CHARGE 2-1/2" 11G IIMX SDP PRO	RTG-2511-420T	IIMX	10.0	37.6	1.5	43.0	1.7	147.5	581.7	22.9	204	1
CHARGE 2-1/2" 11G IIMX SDP PROEX	RTG-2511-422T	IIMX	10.0	37.6	1.5	43.0	1.7	158.5	619.8	24.4	204	1
CHARGE 2-1/2" 11G IINS SDP PRO	RTG-2511-520T	IINS	10.0	37.6	1.5	43.0	1.7	147.3	505.5	19.9	260	1



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- decree nr 90-1089, 7 December 1990 -

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EXPLOSIVES FOR CIVIL USES

1 - ADDITION C2 TO THE EC TYPE-EXAMINATION CERTIFICATE

2 - **0080.EXP.05.0047**

3 - This certificate is relating to the following product:
Shaped charges CE Type 1502 (66 items referenced in the table)

4 - This product is manufactured by :
TITAN ENERGETICS
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

The applicant for the examination is :
TITAN ENERGETICS
A Division of Titan Specialties Ltd.
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

represented in the European Union by :
SPECIAL CARGO SERVICES BV
Breguetlaan 7, Sky Park, Oude Meer
P.O. Box 75709
1118 ZT Schiphol Airport
The Netherlands
Attn: Mr. Hubert den Dikken
Phone: 31 (0) 20-655 6262

5 - The above named product is specified in the enclosed appendix.

6 - The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 6.2 of the Council Directive 93/15/EEC, 5 April 1993, testifies that :

The above named product model is recognized to conform to Essential Safety Requirements as defined in annex I of that Directive.

7 - In addition to the EC type-examination (module B) defined in annex II of the Directive, the applicant has retained the assessment of the Conformity to type (module C) defined in the same annex.

8 - **This addition is to be attached to the certificate 0080.EXP.05.0047, dated December 9, 2005.**



Verneuil-en-Halatte, September 2, 2008
The Chief Executive Officer of INERIS
By delegation, the Certification Division, Manager

C. MICHOT

Folio 1/4

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NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

Appendix to the addition C2 to the EC type-examination certificate nr 0080.EXP.05.0047

A1 - PRODUCT NAME : Shaped charges named CE Type 1502
66 items referenced in the table

A2 - PRODUCT DESCRIPTION :

general identification :

- family : shaped charge
- sub-family : shaped charge, open
- explosive type / mass : see table
- diameter : see table
- height : see table
- total mass : see table
- manufacturer's references : see table

characteristics :

- mean penetration in concrete target : see table

general conditions :

- shelf life : 10 years
- limit temperature for use : see table
- limit temperatures/hygrometry for storage : - 30°C / + 60°C / 90 % RH max



A3 - DOCUMENTATION :

- | | reference | date | origin |
|----------------------|--|------------|--------|
| - examination report | : DCE-2003-43529-
JMo/ST-Ag CE 5/12 | 25/03/2003 | INERIS |

A4 - PARTICULAR CONDITIONS FOR USE :

as specified by TITAN COMPLETION PRODUCTS in the oil well industry

A5 - MARKING :

- CE and symbol of Notified Body : in conformity with paras I and 4 of module C in annex II of the Directive
- others : batch number, certificate nr

Shaped charges CE Type 1502

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max. Hours
CHARGE 2-3/4" 15G RDX SDP PRO	EXP-2715-320T	RDX	12.0	37.6	1.5	43.0	1.7	151.5	569.0	22.4	162	1
CHARGE 2-3/4" 15G RDX SDP PROEX	EXP-2715-322T	RDX	12.0	37.6	1.5	43.0	1.7	160.5	660.4	26.0	162	1
CHARGE 2-3/4" 15G HMX SDP PRO	EXP-2715-420T	HMX	12.0	37.6	1.5	43.0	1.7	150.5	602.0	23.7	204	1
CHARGE 2-3/4" 15G HMX SDP PROEX	EXP-2715-422T	HMX	12.0	37.6	1.5	43.0	1.7	159.5	632.5	24.9	204	1
CHARGE 2-3/4" 15G HNS DP	EXP-2715-522T	HNS	12.0	37.6	1.5	43.0	1.7	160.2	495.3	19.5	260	1
GUNSLINGER												
CHARGE 3-1/8" 12G RDX SDP PRO	EXP-3112-320T	RDX	11.0	43.2	1.7	37.1	1.5	115.6	546.1	21.5	162	1
CHARGE 3-1/8" 12G RDX SDP	EXP-3112-321T	RDX	11.0	43.2	1.7	37.1	1.5	151.7	617.0	24.3	162	1
GUNSLINGER												
CHARGE 3-1/8" 12G HMX SDP	EXP-3112-421T	HMX	11.0	43.2	1.7	37.1	1.5	151.7	617.0	24.3	204	1
GUNSLINGER												
CHARGE 3-1/8" 12G HNS SDP	EXP-3112-521T	HNS	11.0	43.2	1.7	37.1	1.5	115.9	551.2	21.7	260	1
GUNSLINGER												
CHARGE 3-1/8" 14G RDX SDP PRO	EXP-3114-320T	RDX	13.0	39.1	1.5	43.2	1.7	140.4	546.1	21.5	162	1
CHARGE 3-3/8" 19G RDX DP EXP	EXP-3319-302	RDX	18.0	44.5	1.8	52.7	2.1	269.1	477.5	18.8	162	1
CHARGE 3-3/8" 19G RDX SDP PROEX	EXP-3319-322T	RDX	18.0	44.5	1.8	52.7	2.1	278.9	848.4	33.4	162	1
CHARGE 3-3/8" 19G RDX GH PRO	EXP-3319-331	RDX	18.0	44.5	1.8	52.7	2.1	272.9	642.6	25.3	162	1
CHARGE 3-3/8" 19G HMX DP EXP	EXP-3319-402	HMX	18.0	44.5	1.8	52.7	2.1	269.1	477.5	18.8	204	1
CHARGE 3-3/8" 19G HMX SDP PROEX	EXP-3319-422T	HMX	18.0	44.5	1.8	52.7	2.1	277.4	904.2	35.6	204	1
CHARGE 3-3/8" 19G HMX GH PRO	EXP-3319-431	HMX	18.0	44.5	1.8	52.7	2.1	267.4	599.4	23.6	204	1
CHARGE 3-3/8" 22.7G RDX DP PROEX	EXP-3323-301T	RDX	22.0	44.5	1.8	52.7	2.1	274.9	591.8	23.3	162	1
CHARGE 3-3/8" 22.7G RDX DP EXP	EXP-3323-302	RDX	22.0	44.5	1.8	52.7	2.1	272.8	403.9	15.9	162	1
CHARGE 3-3/8" 22.7G RDX SDP PRO	EXP-3323-320T	RDX	20.0	44.5	1.8	52.7	2.1	278.9	706.1	27.8	162	1
CHARGE 3-3/8" 22.7G RDX SDP PROEX	EXP-3323-322T	RDX	19.0	44.5	1.8	52.7	2.1	280.9	904.2	35.6	162	1
CHARGE 3-3/8" 22.7G RDX GH PRO	EXP-3323-331	RDX	20.0	44.5	1.8	52.7	2.1	274.9	604.5	23.8	162	1
CHARGE 3-3/8" 22.7G RDX SDP PRO (.35)	EXP-3323-361T	RDX	20.0	44.5	1.8	52.7	2.1	288.9	762.0	30.0	162	1
CHARGE 3-3/8" 22.7G HMX DP PROEX	EXP-3323-401T	HMX	20.0	44.5	1.8	52.7	2.1	279.8	591.8	23.3	204	1
CHARGE 3-3/8" 22.7G HMX DP EXP	EXP-3323-402	HMX	20.0	44.5	1.8	52.7	2.1	272.8	403.9	15.9	204	1
CHARGE 3-3/8" 22.7G HMX SDP PRO	EXP-3323-420T	HMX	20.0	44.5	1.8	52.7	2.1	276.4	696.0	27.4	204	1
CHARGE 3-3/8" 22.7G HMX SDP PROEX	EXP-3323-422T	HMX	19.0	44.5	1.8	52.7	2.1	278.4	904.2	35.6	204	1
CHARGE 3-3/8" 22.7G HMX GH PRO	EXP-3323-431	HMX	20.0	44.5	1.8	52.7	2.1	273.9	635.0	25.0	204	1
CHARGE 3-3/8" 22.7G HNS SDP PROEX	EXP-3323-522T	HNS	20.0	44.5	1.8	52.7	2.1	279.9	678.2	26.7	260	1
CHARGE 3-3/8" 25G RDX SDP PRO	EXP-3325-321T	RDX	24.0	44.5	1.8	52.7	2.1	282.6	1033.8	40.7	162	1
CHARGE 3-3/8" 25G RDX GH PRO	EXP-3325-331	RDX	24.0	44.5	1.8	52.7	2.1	270.6	609.6	24.0	162	1
CHARGE 3-3/8" 25G HMX SDP PRO	EXP-3325-421T	HMX	24.0	44.5	1.8	52.7	2.1	282.6	1033.8	40.7	204	1

Shaped charges CE type 1502

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max. Hours
CHARGE 3-3/8" 35G HMX GH PRO	EXP-3325-431	HMX	24.0	44.5	1.8	52.7	2.1	270.6	665.5	26.2	204	1
CHARGE 3-3/8" 32G RDX DP PRO	EXP-3322-300	RDX	31.0	46.7	1.8	53.8	2.1	245.5	332.4	21.0	162	1
CHARGE 3-3/8" 32G RDX SDP PRO	EXP-3322-303T	RDX	31.0	44.5	1.8	55.0	2.2	219.8	363.9	22.2	162	1
CHARGE 3-3/8" 32G RDX SDP PRO	EXP-3322-320T	RDX	31.0	46.7	1.8	53.8	2.1	260.5	356.0	33.7	162	1
CHARGE 4" 5 5G RDX SQUEEZE	EXP-4006-3Q1	RDX	3.8	23.7	0.9	28.3	1.1	55.4	129.5	3.1	162	1
CHARGE 4" 16G RDX GH NSG	EXP-4016-302	RDX	15.0	43.9	1.7	45.7	1.8	235.5	310.5	30.1	162	1
CHARGE 4" 19G RDX DP NSG	EXP-4019-301	RDX	18.0	52.3	2.1	65.5	2.6	238.5	474.0	18.66	162	1
CHARGE 4" 23G RDX DP NSG	EXP-4023-301	RDX	21.0	43.9	1.7	45.7	1.8	240.3	457.2	18	162	1
CHARGE 4" 32G RDX	EXP-4032-301	RDX	30.0	53.6	2.1	61.8	2.4	435.4	797.6	31.4	162	1
CHARGE 4" 36G RDX DP EXP	EXP-4036-301	RDX	33.5	53.6	2.1	61.8	2.4	449.4	581.7	32.9	162	1
CHARGE 4" 36G RDX SDP PRO	EXP-4036-323T	RDX	33.5	53.6	2.1	61.8	2.4	445.4	980.4	38.6	162	1
CHARGE 4" 38.5G RDX SDP GUNSLINGER	EXP-4039-321T	RDX	37.5	53.6	2.1	61.8	2.4	454.9	1206.5	47.5	162	1
CHARGE 4" 38.5G RDX SDP PRO	EXP-4039-323T	RDX	38.0	53.6	2.1	61.8	2.4	457.9	1013.5	38.9	162	1
CHARGE 4" 38.5G HMX SDP GUNSLINGER	EXP-4039-421T	HMX	37.5	53.6	2.1	61.8	2.4	454.9	1206.5	47.5	204	1
CHARGE 4" 38.5G HMX SDP PRO	EXP-4039-423T	HMX	36.5	53.6	2.1	61.8	2.4	447.9	939.8	37	204	1
CHARGE 4-1/2" 21G RDX SDP PRO	EXP-4521-320T	RDX	20.0	44.0	1.7	52.4	2.1	217.2	656.3	25.8	162	1
CHARGE 4-1/2" 21G RDX SDP PROEX	EXP-4521-322T	RDX	20.0	44.0	1.7	52.4	2.1	225.2	721.4	28.4	162	1
CHARGE 4-1/2" 21G RDX DP EXP	EXP-4521-331	RDX	20.0	44.0	1.7	52.4	2.1	217.9	541.0	21.3	162	1
CHARGE 4-1/2" 21G HMX SDP PRO	EXP-4521-420T	HMX	20.0	44.0	1.7	52.4	2.1	218.2	678.2	26.7	204	1
CHARGE 4-1/2" 21G HMX SDP PROEX	EXP-4521-422T	HMX	20.0	44.0	1.7	52.4	2.1	225.2	756.9	29.8	204	1
CHARGE 4-1/2" 21G HMX DP EXP	EXP-4521-431	HMX	20.0	44.0	1.7	52.4	2.1	217.9	539.8	21.3	204	1
CHARGE 4-1/2" 21G HNS SDP PROEX	EXP-4521-522T	HNS	20.0	44.0	1.7	52.4	2.1	226.9	541.0	21.3	260	1
CHARGE 4-1/2" 21G HNS DP EXP	EXP-4521-531	HNS	20.0	44.0	1.7	52.4	2.1	217.9	539.8	21.3	260	1
CHARGE 4-1/2" 38.5G RDX DP PRO	EXP-4539-321T	RDX	38.0	50.8	2.0	71.1	2.8	467.4	962.7	37.9	162	1
CHARGE 4-1/2" 38.5G RDX SDP PRO	EXP-4539-323T	RDX	38.0	50.8	2.0	71.1	2.8	481.9	1066.8	42	162	1
CHARGE 4-1/2" 38.5G RDX SDP PROEX	EXP-4539-324T	RDX	36.5	50.8	2.0	71.1	2.8	476.9	1280.2	50.4	162	1
CHARGE 4-1/2" 38.5G HMX DP PRO	EXP-4539-421T	HMX	38.0	50.8	2.0	71.1	2.8	476.9	982.7	37.9	204	1
CHARGE 4-1/2" 38.5G HMX SDP PRO	EXP-4539-423T	HMX	38.0	50.8	2.0	71.1	2.8	477.9	1069.3	42.1	204	1
CHARGE 4-1/2" 38.5G HMX SDP PROEX	EXP-4539-424T	HMX	36.5	50.8	2.0	71.1	2.8	477.9	1280.2	50.4	204	1
CHARGE 4-1/2" 38.5G HNS SDP PRO	EXP-4539-523T	HNS	38.5	50.8	2.0	71.1	2.8	494.2	688.3	27.1	260	1
CHARGE 6" 32G RDX DP	EXP-6022-303	RDX	31.0	33.6	2.1	61.7	2.4	434.3	531.8	22.3	162	1
CHARGE 6" 34G RDX CJDP	EXP-6034-300	RDX	33.0	53.6	2.1	61.7	2.4	436.3	447.0	17.6	162	1
CHARGE 7" 38.5G RDX GH OUTLAW	EXP-7039-331	RDX	37.5	53.6	2.1	61.7	2.4	429.4	711.2	28.0	162	1
CHARGE 7" 38.5G RDX GH OUTLAW II	EXP-7039-332	RDX	37.5	53.6	2.1	61.7	2.4	423.5	812.8	32.0	162	1



INERIS

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

EXPLOSIVES FOR CIVIL USES

1 - ADDITION C2 TO THE EC TYPE-EXAMINATION CERTIFICATE

2 - **0080.EXP.05.0048**

3 - This certificate is relating to the following product:
Shaped charges CE Type 1503 (28 items referenced in the table)

4 - This product is manufactured by :
TITAN ENERGETICS
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

The applicant for the examination is :
TITAN ENERGETICS
A Division of Titan Specialties Ltd.
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

represented in the European Union by :
SPECIAL CARGO SERVICES BV
Breguetlaan 7, Sky Park, Oude Meer
P.O. Box 75709
1118 ZT Schiphol Airport
The Netherlands
Attn: Mr. Hubert den Dikken
Phone: 31 (0) 20-655 6262

5 - The above named product is specified in the enclosed appendix.

6 - The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 6.2 of the Council Directive 93/15/EEC, 5 April 1993, testifies that :

The above named product model is recognized to conform to Essential Safety Requirements as defined in annex I of that Directive.

7 - In addition to the EC type-examination (module B) defined in annex II of the Directive, the applicant has retained the assessment of the Conformity to type (module C) defined in the same annex.

8 - **This addition is to be attached to the certificate 0080.EXP.05.0048, dated December 9, 2005.**



Verneuil-en-Halatte, September 2, 2008
The Chief Executive Officer of INERIS
By delegation, the Certification Division, Manager

C. MICHOT



INERIS

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

Appendix to the addition C2 to the EC type-examination certificate nr 0080.EXP.05.0048

A1 - PRODUCT NAME : Shaped charges named CE Type 1503
28 items referenced in the table

A2 - PRODUCT DESCRIPTION :
general identification :

- family : shaped charge
- sub-family : shaped charge, open
- explosive type / mass : see table
- diameter : see table
- height : see table
- total mass : see table
- manufacturer's references : see table

characteristics :

- mean penetration in concrete target : see table

general conditions :

- shelf life : 10 years
- limit temperature for use : see table
- limit temperatures/hygrometry for storage : - 30°C / + 60°C / 90 % RH max

A3 - DOCUMENTATION :

- | | reference | origin | date |
|----------------------|--|------------|--------|
| - examination report | : DCE-2003-43529-
JMo/ST-Ag CE 5/12 | 25/03/2003 | INERIS |

A4 -PARTICULAR CONDITIONS FOR USE :

as specified by TITAN COMPLETION PRODUCTS in the oil well industry

A5 -MARKING :

- CE and symbol of Notified Body : in conformity with paras 1 and 4 of module C in annex II of the Directive
- others : batch number, certificate nr



Shaped charges CE Type 1503

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max. Hours
CHARGE 1-9/16" 3.2G RDX BH RTG	FLO-1603-310	RDX	2.2	24.1	0.9	25.4	1.0	43.7	73.7	2.9	162	1
CHARGE 1-9/16" 3.2G HMX BH RTG	FLO-1603-410	HMX	2.2	24.1	0.9	25.4	1.0	43.7	71.1	2.8	204	1
CHARGE 2" 6.5G RDX BH RTG	FLO-2106-310	RDX	5.5	30.5	1.2	35.6	1.4	85.8	81.3	3.2	162	1
CHARGE 2" 6.5G HMX BH RTG	FLO-2106-410	HMX	5.5	30.5	1.2	35.6	1.4	85.3	81.3	3.2	204	1
CHARGE 2" 6.5G HNS BH RTG	FLO-2106-510	HNS	5.5	30.5	1.2	35.6	1.4	85.3	81.3	3.2	260	1
CHARGE 2-1/2" 11G RDX BH	FLO-2511-310B	RDX	10.0	37.6	1.5	43.0	1.7	131.0	101.6	4.0	162	1
CHARGE 2-1/2" 11G HMX BH	FLO-2511-410B	HMX	10.0	37.6	1.5	43.0	1.7	137.0	101.6	4.0	204	1
CHARGE 2-3/4" 15G RDX BH EXP BTY	FLO-2715-310B	RDX	14.0	37.6	1.5	43.0	1.7	134.9	88.9	3.5	162	1
CHARGE 2-3/4" 15G HMX BH EXP BTY	FLO-2715-410B	HMX	14.0	37.6	1.5	43.0	1.7	135.7	88.9	3.5	204	1
CHARGE 3-1/8" 12G RDX BH	FLO-3112-310B	RDX	11.0	37.6	1.5	43.0	1.7	94.6	101.1	4.0	162	1
CHARGE 3-1/8" 12G HMX BH	FLO-3112-410B	HMX	11.0	37.6	1.5	43.0	1.7	94.6	101.1	4.0	204	1
CHARGE 3-3/8" 22G RDX BH EXP	FLO-3323-310B	RDX	21.0	46.7	1.8	53.8	2.1	251.8	109.2	4.3	162	1
CHARGE 3-3/8" 22G HMX BH EXP	FLO-3323-410B	HMX	21.0	46.7	1.8	53.8	2.1	251.8	109.2	4.3	204	1
CHARGE 3-3/8" 22G HNS BH BTY	FLO-3323-510B	HNS	21.0	46.7	1.8	53.8	2.1	248.9	109.2	4.3	260	1
CHARGE 3-3/8" 26G RDX BH BTY	FLO-3326-310B	RDX	25.0	46.7	1.8	53.8	2.1	211.8	172.7	6.8	162	1
CHARGE 4" 32G RDX BH EXP	FLO-4032-311B	RDX	31.0	53.6	2.1	61.8	2.4	392.6	172.7	6.8	162	1
CHARGE 4" 36G RDX BH EXP	FLO-4036-311B	RDX	35.0	53.6	2.1	61.8	2.4	396.6	160.0	6.3	162	1
CHARGE 4" 38.5G RDX BH CF BTY	FLO-4039-311CF	RDX	37.5	53.6	2.1	61.8	2.4	399.7	165.1	6.5	162	1
CHARGE 4-1/2" 21G RDX BH BTY	FLO-4521-310B	RDX	20.0	44.0	1.7	52.4	2.1	190.9	109.2	4.3	162	1
CHARGE 4-1/2" 21G RDX BH CF BTY	FLO-4521-310CF	RDX	20.0	44.0	1.7	52.4	2.1	192.3	116.8	4.6	162	1
CHARGE 4-1/2" 24G RDX CJBH CF BTY	FLO-4524-311CF	RDX	23.0	44.0	1.7	52.4	2.1	230.0	165.1	6.5	162	1
CHARGE 4-5/8" 17G RDX BH CFLD BTY	FLO-4617-311CFZ	RDX	16.0	50.2	2.0	37.8	1.8	91.1	150.9	5.9	162	1
CHARGE 4-5/8" 20G RDX BH CFLD BTY	FLO-4620-311CFZ	RDX	19.0	50.2	2.0	37.8	1.8	110.3	171.5	6.8	162	1
CHARGE 4-5/8" 21G RDX CJBH (CF) BTY	FLO-4621-311CF	RDX	20.0	50.2	2.0	37.8	1.5	183.8	177.0	5	162	1
CHARGE 4-5/8" 21G HMX CJBH (CF) BTY	FLO-4621-411CF	HMX	20.0	50.2	2.0	37.8	1.5	183.7	172.7	6.8	204	1
CHARGE 5" 28G RDX BH EXP BTY	FLO-5028-310B	RDX	27.0	53.3	2.1	43.2	1.7	233.4	165.1	6.5	162	1
CHARGE 5" 28G HMX BH EXP BTY	FLO-5028-410B	HMX	27.0	53.3	2.1	43.2	1.7	233.4	165.1	6.5	204	1
CHARGE 6" 34G RDX CJBH BRASS LINER	FLO-6034-310B	RDX	33.0	53.3	2.1	43.2	1.7	239.4	137.2	5.4	162	1



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NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

EXPLOSIVES FOR CIVIL USES

1 - ADDITION C2 TO THE EC TYPE-EXAMINATION CERTIFICATE

2 - **0080.EXP.05.0049**

3 - This certificate is relating to the following product:
Shaped charges CE Type 1504 (21 items referenced in the table)

4 - This product is manufactured by :
TITAN ENERGETICS
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

The applicant for the examination is :
TITAN ENERGETICS
A Division of Titan Specialties Ltd.
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

represented in the European Union by :
SPECIAL CARGO SERVICES BV
Breguetlaan 7, Sky Park, Oude Meer
P.O. Box 75709
1118 ZT Schiphol Airport
The Netherlands
Attn: Mr. Hubert den Dikken
Phone: 31 (0) 20-655 6262

5 - The above named product is specified in the enclosed appendix.

6 - The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 6.2 of the Council Directive 93/15/EEC, 5 April 1993, testifies that :

The above named product model is recognized to conform to Essential Safety Requirements as defined in annex I of that Directive.

7 - In addition to the EC type-examination (module B) defined in annex II of the Directive, the applicant has retained the assessment of the Conformity to type (module C) defined in the same annex.

8 - **This addition is to be attached to the certificate 0080.EXP.05.0049, dated December 9, 2005.**



Verneuil-en-Halatte, September 2, 2008
The Chief Executive Officer of INERIS
By delegation, the Certification Division, Manager

C. MICHOT



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NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

Appendix to the addition C2 to the EC type-examination certificate nr 0080.EXP.05.0049

A1 - PRODUCT NAME : Shaped charges named CE Type 1504
21 items Referenced in the table

A2 - PRODUCT DESCRIPTION :
general identification :

- family : shaped charge
- sub-family : shaped charge, tight
- explosive type / mass : see table
- diameter : see table
- height : see table
- total mass : see table
- manufacturer's references : see table

characteristics :

- mean penetration in concrete target : see table

general conditions :

- shelf life : 10 years
- limit temperature for use : see table
- limit temperatures/hygrometry for storage : - 30°C / + 60°C / 90 % RH max

A3 - DOCUMENTATION :

	reference	date	origin
- examination report	: DCE-2003-43529- JMo/ST-Ag CE 5/12	25/03/2003	INERIS

A4 - PARTICULAR CONDITIONS FOR USE :

as specified by TITAN COMPLETION PRODUCTS in the oil well industry

A5 - MARKING :

- CE and symbol of Notified Body : in conformity with paras 1 and 4 of module C in annex II of the Directive
- others : batch number, certificate nr



Shaped charges CE Type 1504

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max Hours
CHARGE 2-3/4" 6G RDX DP PPG W/SLV	PPG-2706-300	RDX	5.0	31.5	1.2	36.4	1.4	101.1	276.9	10.9	162	1
CHARGE 3-1/8" 11G RDX DP PRO WO/SLV	PPG-3111-301	RDX	10.0	42.0	1.7	48.9	1.9	133.1	426.7	16.8	162	1
CHARGE 3-1/8" 11G RDX BH	PPG-3111-311	RDX	11.0	42.0	1.7	48.9	1.9	119.7	330.2	13.0	162	1
CHARGE 3-1/8" 11G RDX SDP PRO W/SLV	PPG-3111-320	RDX	10.5	42.0	1.7	48.9	1.9	133.1	426.7	16.8	162	1
CHARGE 3-1/8" 11G RDX SDP PRO WO/SLV	PPG-3111-321	RDX	10.0	42.0	1.7	48.9	1.9	133.1	426.7	16.8	162	1
CHARGE 3-1/8" 11G RDX GH PRO WO/SLV	PPG-3111-331	RDX	10.0	42.0	1.7	48.9	1.9	135.1	426.7	16.8	162	1
CHARGE 3-1/8" 11G HMX DP PRO WO/SLV	PPG-3111-401	HMX	10.0	42.0	1.7	48.9	1.9	128.7	475.0	18.7	204	1
CHARGE 3-1/8" 11G HMX BH	PPG-3111-411	HMX	10.0	42.0	1.7	48.9	1.9	119.7	330.2	13.0	204	1
CHARGE 3-1/8" 11G HMX SDP PRO WO/SLV	PPG-3111-421	HMX	10.0	42.0	1.7	48.9	1.9	128.7	426.7	16.8	204	1
CHARGE 3-1/8" 12G RDX BH PPG WO/SLV	PPG-3112-310B	RDX	11.0	36.4	1.4	36.4	1.4	127.4	86.4	3.4	162	1
CHARGE 3-1/8" 12G RDX SDP PRO WO/SLV	PPG-3112-321T	RDX	11.0	42.0	1.7	48.9	1.9	135.1	495.3	19.5	162	1
CHARGE 3-1/8" 12G HMX SDP PRO WO/SLV	PPG-3112-421T	HMX	11.0	42.0	1.7	48.9	1.9	130.7	495.3	19.5	204	1
CHARGE 4" 19G RDX DP PPG	PPG-4019-301	RDX	18.0	42.0	1.7	45.7	1.8	306.9	527.3	20.8	162	1
CHARGE 4" 19G RDX SDP PRO W/SLV	PPG-4019-320	RDX	18.0	43.9	1.7	45.7	1.8	292.1	617.2	24.3	162	1
CHARGE 4" 19G RDX SDP PRO W/SLV	PPG-4019-321	RDX	18.0	43.9	1.7	45.7	1.8	292.1	617.2	24.3	162	1
CHARGE 4" 19G RDX SDP PRO W/SLV	PPG-4019-321T	RDX	18.0	43.9	1.7	45.7	1.8	296.1	749.3	29.5	162	1
CHARGE 4" 22G RDX DP PPG W/S	PPG-4022-301	RDX	21.0	43.9	1.7	45.7	1.8	309.9	576.6	22.7	162	1
CHARGE 4" 22G RDX BH PPG W/SLV	PPG-4022-310B	RDX	22.0	53.3	2.1	55.0	2.6	289.6	137.2	5.4	162	1
CHARGE 4" 23G RDX SDP PRO W/SLV	PPG-4023-320T	RDX	21.0	43.9	1.7	45.7	1.8	302.8	751.8	29.6	162	1
CHARGE 4" 23G RDX SDP PRO W/SLV	PPG-4023-321T	RDX	20.0	43.9	1.7	45.7	1.8	302.1	749.3	29.5	162	1
CHARGE 4" 22.7G HMX SDP PRO WO/SLV	PPG-4023-421T	HMX	21.0	43.9	1.7	45.7	1.8	299.8	751.8	29.6	204	1



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NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

EXPLOSIVES FOR CIVIL USES

1 - ADDITION C1 TO THE EC TYPE-EXAMINATION CERTIFICATE

2 - **0080.EXP.05.0050**

3 - This certificate is relating to the following product:
Shaped charges CE Type 1505 (8 items referenced in the table)

4 - This product is manufactured by :
TITAN ENERGETICS
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

The applicant for the examination is :
TITAN ENERGETICS
A Division of Titan Specialties Ltd.
143 HCR 4361
MILFORD, TEXAS 76670 (USA)

represented in the European Union by :
SPECIAL CARGO SERVICES BV
Breguetlaan 7, Sky Park, Oude Meer
P.O. Box 75709
1118 ZT Schiphol Airport
The Netherlands
Attn: Mr. Hubert den Dikken
Phone: 31 (0) 20-655 6262

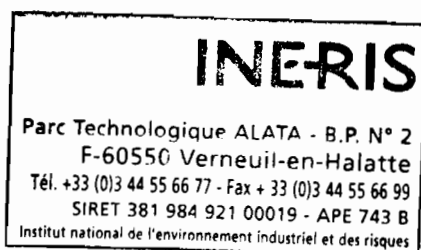
5 - The above named product is specified in the enclosed appendix.

6 - The National Institute for Industrial Environment and Risk (INERIS), notified with the identification number 0080 in accordance with the article 6.2 of the Council Directive 93/15/EEC, 5 April 1993, testifies that :

The above named product model is recognized to conform to Essential Safety Requirements as defined in annex I of that Directive.

7 - In addition to the EC type-examination (module B) defined in annex II of the Directive, the applicant has retained the assessment of the Conformity to type (module C) defined in the same annex.

8 - **This addition is to be attached to the certificate 0080.EXP.05.0050, dated December 9, 2005.**



Verneuil-en-Halatte, September 2, 2008
The Chief Executive Officer of INERIS
By delegation, the Certification Division, Manager

C. MICHOT



INERIS

NATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENT AND RISK

- decree nr 90-1089, 7 December 1990 -

- order from the Minister of Industry, 20 December 1996 -

Appendix to the addition C1 to the EC type-examination certificate nr 0080.EXP.05.0050

A1 - PRODUCT NAME : Shaped charges named CE Type 1505
8 items Referenced in the table

A2 - PRODUCT DESCRIPTION :
general identification :

- family : shaped charge
- sub-family : shaped charge, tight
- explosive type / mass : see table
- diameter : see table
- height : see table
- total mass : see table
- manufacturer's references : see table

characteristics :

- mean penetration in concrete target : see table

general conditions :

- shelf life : 10 years
- limit temperature for use : see table
- limit temperatures/hygrometry for storage : - 30°C / + 60°C / 90 % RH max

A3 - DOCUMENTATION :

- | | reference | date | origin |
|----------------------|--------------------------------------|------------|--------|
| - examination report | DCE-2003-43529-
JMo/ST-Ag CE 5/12 | 25/03/2003 | INERIS |

A4 -PARTICULAR CONDITIONS FOR USE :

as specified by TITAN COMPLETION PRODUCTS in the oil well industry

A5 -MARKING :

- CE and symbol of Notified Body : in conformity with paras 1 and 4 of module C in annex II of the Directive
- others : batch number, certificate nr



Appendix to the addition C1 to the EC type-examination certificate nr 0080.EXP.05.0050

Shaped charges CE Type 1505

Product Name	Part Number / Manufacturer's Reference	Explosives		Diameter		Height		Total mass, g	Minimum Running Average Penetration in Concrete Target		Limit Temperature for Use	
		Type	Mass, g	mm	in.	mm	in.		mm	in.	°C	Max. Hours
CHARGE 1-11/16" 8G RDX BH REN	CAP-1708-310B	RDX	8	36.6	1.4	41.5	1.6	115.3	101.6	4	162	1
CHARGE 1-11/16" 8G HMX BH REN	CAP-1708-410B	HMX	8	36.6	1.4	41.5	1.6	151.3	101.6	4	204	1
CHARGE 1-11/16" 8G RDX SDP REN	CAP-1708-320T Previously CAP-1608-320T	RDX	8	36.6	1.4	41.5	1.6	119.1	497.7	19.2	162	1
CHARGE 1-11/16" 8G HMX SDP REN	CAP-1708-420T Previously CAP-1608-420T	HMX	8	36.6	1.4	41.5	1.6	116.8	526.3	20.8	204	1
CHARGE 2-1/8" 15G RDX BH	CAP-2115-310B	RDX	15	30.5	1.2	33.6	1.4	85.3	114.3	4.5	162	1
CHARGE 2-1/8" 15G HMX BH	CAP-2115-410B	HMX	15	42.6	1.7	52	2	151.8	114.3	4.5	204	1
CHARGE 2-1/8" 15G RDX SDP REN	CAP-2115-320T	RDX	15	42.6	1.7	52	2.0	204.5	680.7	26.8	162	1
CHARGE 2-1/8" 15G HMX SDP REN	CAP-2115-420T	HMX	15	42.6	1.7	52	2.0	203.5	711.2	28.0	204	1

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