

**1 EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 06ATEX2181X** Issue: **0**4 Equipment: **TX6531 Cherub Personal Gas Monitor**5 Applicant: **Trolex Ltd**6 Address: Newby Road  
Hazel Grove  
Stockport  
Cheshire  
SK7 5DY

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2006

EN 60079-11:2007

EN 50303:2000

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



I M1

Ex ia d I (Ta = -20°C to +44°C)

OR



II 2G

Ex ia d IIB T3 (Ta = -20°C to +44°C)

Project Number 52A14503  
C. Index 14

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D R Stubbings BA MIET  
Certification Manager



## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

Sira 06ATEX2181X

Issue 0

#### 13 DESCRIPTION OF EQUIPMENT

The TX6531 Cherub Personal Gas Monitor is a portable hand held gas sensing instrument designed for continuous monitoring of gas concentrations, for example in sewers, underground piping or within tanks, and other personal monitoring applications.

The Monitor comprises electronic components mounted on 4 printed circuit boards (pcb's), a liquid crystal display unit (LCD), an audible alarm, a tactile alarm for use in high ambient noise areas, 6 light emitting diodes (LEDs), a battery pack and up to 2 gas sensors all housed in a plastic enclosure held together by tamper resistant fixings. Mounted on the front of the enclosure is a push button to operate the instrument and to interrogate the measurements displayed on the liquid crystal display unit.

The battery pack is a Sony Fukushima Lithium-Polymer battery pack consisting of 2 type US383562 A7 sealed Lithium ion cells connected in parallel via an encapsulated protection circuit.

The TX6531 Cherub Personal Gas Monitor is **NOT** designed for use in oxygen levels above 21%.

Charging of the Lithium-Polymer battery pack is permitted only in a non-hazardous area and by a charger having a maximum output voltage of 6.0V. The permitted chargers are either a TX6538 or a TX6539 supplied by Trolex Limited.

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	14 January 2008	R52A14503A	The release of the prime certificate.

#### 15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 Charging of the Sony Fukushima Lithium-Polymer battery pack is permitted only in a non-hazardous area and by a charger supplied by Trolex Ltd.

15.2 The TX6531 Cherub Personal Gas Monitor MUST NOT be subjected to impacts or mechanical stress.

#### 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

#### 17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The permitted battery pack is a Sony Fukushima Lithium-Polymer battery pack consisting of 2 type US383562 A7 sealed Lithium ion cells connected in parallel via an encapsulated protection circuit. The protection circuit for each cell consists of a fuse and a current limiting resistor all mounted on a double-sided printed circuit board.

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### Sira Certification Service

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**SCHEDULE**

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**Sira 06ATEX2181X**  
**Issue 0**

- 17.4 Fuses F2, F3 and F4 mounted on the component side of PCB No. P533-54-A1 or PCB No. P533-56-A1 shall be fully covered with Electrolube UR5044 (a Polyurethane flame retardant epoxy compound) having a minimum thickness of 1.0mm over each fuse in all directions.
- 17.5 The 125mA Fuses, F2 and F3 each have a minimum resistance of 0.82Ω.
- 17.6 The following component must not be fitted to the TX6531 Cherub Personal Gas Monitor: R121.
- 17.7 The permitted value for resistor R65 is 0.4Ω maximum at 250mW.
- 17.8 The permitted value for resistor R104 is 165Ω minimum at 125mW.

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# Certificate Annexe

**Certificate Number:** Sira 06ATEX2181X  
**Equipment:** TX6531 Cherub Personal Gas Monitor  
**Applicant:** Trolex Ltd



## Issue 0

Document No.	Document Title	Sheets	Issue	Date (yyyy/mm/dd)
P5533-66	General assembly	1 of 1	A	2005/12/21
P5533-61	Circuit diagram, Control PCB	1 of 4	A1	2005/12/08
P5533-61	Circuit diagram, Flammable/Toxic Sensor PCB	2 of 4	A1	2005/12/08
P5533-61	Circuit diagram, Flammable/Oxygen Sensor PCB	3 of 4	A1	2005/12/08
P5533-61	Parts list, Control and Sensor PCB's	4 of 4	A1	2005/12/08
P5533-52	Artwork details, Control PCB	1 of 1	A	2005/12/09
P5533-54	Artwork details, Sensor PCB	1 of 1	A	2005/12/09
P5533-56	Artwork details, Flammable/Oxygen PCB	1 of 1	A	2005/12/09
P5533-58	Artwork details, Oxygen Sensor PCB	1 of 1	A	2005/12/09
P5533-59	Artwork details, Toxic Sensor PCB	1 of 1	A	2005/12/09
P5533-60	Artwork details, Flammable Sensor PCB	1 of 1	A	2005/12/09
P5533-08c	Battery pack	1 of 2	C	2003/02/07
P5533-08c	Battery pack PCB encapsulation details	2 of 2	A	2007/07/05
P5533-68	Battery pack assembly	1 of 1	A1	2007/06/27
P5533-69	Artwork details, Battery pack PCB	1 of 1	A	2005/12/09
P5533-70	Label details	1 of 1	A	2007/10/23

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