

# ISO 22734-2:2011-11 (E)

## Hydrogen generators using water electrolysis process - Part 2: Residential applications

---

Contents	Page
Foreword .....	v
Introduction .....	vi
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	5
4 Operating conditions .....	6
4.1 Energy consumption .....	6
4.2 Feed water specifications .....	6
4.3 Ambient environment .....	7
4.4 Purge gas .....	7
4.5 Oxygen venting .....	7
4.6 Hydrogen venting .....	7
4.7 Delivery of hydrogen .....	8
5 Mechanical equipment .....	8
5.1 General requirements .....	8
5.2 General materials requirements .....	9
5.3 Enclosures .....	9
5.4 Pressure-bearing components .....	11
5.5 Fans and ventilators .....	13
5.6 Pumps .....	13
5.7 Heat transfer system .....	13
5.8 Connection to potable water .....	14
6 Electrical equipment, wiring and ventilation .....	14
6.1 Fire and explosion hazard protection requirements .....	14
6.2 Electrical equipment .....	16
7 Control systems .....	18
7.1 General .....	18
7.2 Control function in the event of failure .....	19
7.3 Programmable electronic equipment .....	19
7.4 Start .....	19
7.5 Emergency stop .....	19
7.6 Stop .....	20
7.7 Self-correctable conditions .....	20
7.8 Interconnected installations .....	20
7.9 Safety components .....	20
7.10 Remote control systems .....	21
7.11 Alarms .....	21
7.12 Purge gas quantity .....	21
7.13 Reset .....	21
7.14 Suspension of safeguards .....	21
8 Ion transport medium .....	21
8.1 Electrolyte .....	21

8.2	<b>Membrane</b>	22
9	<b>Protection of service personnel</b>	22
10	<b>Test methods</b>	23
10.1	Type (qualification) tests	23
10.2	Routine tests	33
11	<b>Marking and labelling</b>	34
11.1	General requirements	34
11.2	Hydrogen generator marking	34
11.3	Marking of components	35
11.4	Warning signs	35
12	<b>Documentation accompanying the hydrogen generator</b>	35
12.1	General	35
12.2	Hydrogen generator ratings	36
12.3	Hydrogen generator installation	36
12.4	Hydrogen generator operation	38
12.5	Hydrogen generator maintenance	39
	<b>Annex A (informative) Hydrogen-assisted corrosion</b>	40
	<b>Annex B (informative) Flammability limits of hydrogen</b>	41
	<b>Bibliography</b>	42