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Hydrogen generators using water electrolysis process —

Part 1: Industrial and commercial applications

Générateurs d'hydrogène utilisant le procédé de l'électrolyse de l'eau —

Partie 1: Applications industrielles et commerciales

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Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22734-1 was prepared by Technical Committee ISO/TC 197, *Hydrogen technologies*.

ISO 22734 consists of the following parts, under the general title *Hydrogen generators using water electrolysis process*:

— *Part 1: Industrial and commercial applications*

— *Part 2: Residential applications*

0 Introduction

0.1 Electrolysis Technology

In an electrolyser cell, electricity causes dissociation of water into hydrogen and oxygen molecules. An electric current is passed between two electrodes separated by a conductive electrolyte or “ion transport medium”, producing hydrogen at the negative electrode (cathode) and oxygen at the positive electrode (anode). As water is H_2O, twice the volume of hydrogen is produced over oxygen. Hydrogen gas produced using electrolysis technology can be utilized immediately or stored for later use.

The cell(s), and electrical, gas processing, ventilation, cooling and monitoring equipment and controls are contained within the hydrogen generator enclosure. Gas compression and feed water conditioning and auxiliary equipment may also be included.