

DIN EN 939:2016-09 (E)

Chemicals used for treatment of water intended for human consumption - Hydrochloric acid

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Description	6
3.1	Identification	6
3.1.1	Chemical name	6
3.1.2	Synonym or common names	6
3.1.3	Relative molecular mass	6
3.1.4	Empirical formula	6
3.1.5	Chemical formula	6
3.1.6	CAS Registry Number)	7
3.1.7	EINECS reference)	7
3.2	Commercial forms	7
3.3	Physical properties	7
3.3.1	Appearance	7
3.3.2	Density	7
3.3.3	Solubility	7
3.3.4	Vapour pressure	7
3.3.5	Boiling point at 100 kPa	7
3.3.6	Melting or freezing point	8
3.3.7	Specific heat	8
3.3.8	Viscosity (dynamic)	8
3.3.9	Critical temperature	8
3.3.10	Critical pressure	8
3.3.11	Physical hardness	8
3.4	Chemical properties	8
4	Purity criteria	8
4.1	General	8
4.2	Composition of commercial product	8
4.3	Impurities and main by-products	9
4.4	Chemical parameters	9
5	Test methods	9
5.1	Sampling	9
5.2	Analysis	9
5.2.1	Determination of hydrochloric acid content (main product)	9
5.2.2	Impurities	10
5.2.3	Chemical parameters	14
6	Labelling - Transportation - Storage	16
6.1	Means of delivery	16
6.2	Labelling according to the EU legislation)	16
6.3	Transportation regulations and labelling	18
6.4	Marking	18
6.5	Storage	18

6.5.1	Containers	18
6.5.2	Long term stability	18
6.5.3	Storage incompatibilities	18
Annex A (informative) General information on hydrochloric acid		19
A.1	Origin	19
A.1.1	Raw materials	19
A.1.2	Manufacturing process	19
A.2	Use	19
A.2.1	Function	19
A.2.2	Form in which it is used	19
A.2.3	Treatment dose	19
A.2.4	Mean of application	19
A.2.5	Secondary effects	19
A.2.6	Removal of excess product	20
A.3	Routine analyses	20
Annex B (normative) General rules relating to safety		21
B.1	Rules for safe handling and use	21
B.2	Emergency procedures	21
B.2.1	First aid	21
B.2.2	Spillage	21
B.2.3	Fire	21
Annex C (normative) Determination of arsenic, antimony and selenium (atomic absorption spectrometry hydride technique)		22
C.1	Safety precautions	22
C.2	General principle	22
C.3	Interferences	22
C.4	Reagents	22
C.5	Apparatus	24
C.6	Procedure	26
C.6.1	Preparation of the apparatus	26
C.6.2	Preparation of calibration solutions	27
C.6.3	Preparation of test solutions and standard solutions	27
C.6.4	Determination of arsenic with sodium borohydride	27
C.6.5	Determination of selenium with sodium borohydride	27
C.6.6	Determination of antimony with sodium borohydride	28
C.7	Calculation	28
Bibliography		29