reachcentrum

HYDROGEN CHLORIDE (HCl) – REACH CONSORTIUM

Substance Profile

Identification

Substance name:	hydrogen chloride
Chemical Formula:	HCl
CAS no.:	7647-01-0
EINECS no.:	231-595-7

Classification & Labelling

According to Regulation (EC) 1272/2008, Annex VI:

a) Index no.:	017-002-00-2
Substance Name:	hydrogen chloride
b) Index no.:	017-002-01-X
Substance name:	hydrochloric acid ... %

The substance to be registered is hydrogen chloride (HCl) as a mono-constituent substance of min 80 % (w/w) HCl excluding water (= solvent).

At normal temperature and pressure, HCl is a gas. It is sold in this form in pressurised containers. It is mostly produced and used in aqueous solution (= hydrochloric acid) of various concentrations, with a concentration range of up to 40 % (w/w) HCl.

Additional information on substance composition

HCl / hydrochloric acid is produced from "burning" Cl_2 with H_2 or derived from a large variety of processes in the chemical industry or recycled from previous usage. Impurities derive from the various processes from which HCl / hydrochloric acid is released or recycled.

a) Hydrogen Chloride (HCl gas)

The typical purity is > 99 % (v/v).

b) Hydrochloric Acid (HCl in aqueous solution)

For registration purposes, the composition is declared without water. The purity depends on the source and is typically > 95 % (w/w).

Impurities

For registration purposes also the amounts of impurities in hydrochloric acid need to be declared without water but based on the HCl content.
Possible impurities may be metal ions, alkali metal ions, other halogen-hydrogen compounds, sulphate, halogenated and non-halogenated organic compounds, etc. which may all occur alone or in a multitude of combinations. Heavy metals may occur, but no metal is present in amounts > 0.1 % (w/w).
No impurity that is classified as "Dangerous" and is present at a concentration > 1 % (w/w) sufficient to require a change in the harmonised EU classification and labelling for hydrochloric acid (HCl in water), with the exception of hydrofluoric acid in concentrations > 0.1 % (w/w), which may need additional labelling and additional risk assessment in the company-specific dossier(s).
Substances which are classified by the EU as CMR Cat. 1 or 2, PBT or vPvB are not present in amounts > 0.1 %. Substances for which specific concentration limits, lower than 0.1 or 1 % (w/w) have been set in Annex I of Regulation (EC) 1272/2008 (succeeding Directive 67/548/EEC) are not present in amounts that would require additional classification and labelling. Substances, for which concentration limits are given in any other EU Directive or Regulation such as the former Marketing and Use Directive 76/769/EEC, are not present in amounts exceeding those limits.
Substances of very high concern (SHVC) are not present in quantities > 0.1 % (w/w).

Individual companies are advised to check their own impurities for specific concentration limits and to inform the consortium secretariat about the identity of the impurities, the concentrations based on the HCl content and the identified limits.