THE LINDE GROUP

# The SOLVOCARB® process. Neutralization of alkaline wastewater with carbon dioxide.

## General

Due to stricter environmental requirements, today wastewater may only be discharged into the sewage pipelines or outlet channels if it is within a narrow pH range around the neutral point. The SOLVOCARB® method employs the environmentally-friendly gas carbon dioxide ($CO_2$), to neutralize alkaline waters. When dissolved in water, carbon dioxide forms carbonic acid and reduces the pH value to the appropriate level.

## Advantages

Compared with mineral acids, carbon dioxide and carbonic acid offer many advantages:

- Carbon dioxide is not categorized as a substance that is harmful to water
- No additonal salt formation in the water as chlorides, sulphates etc. and therefore no increased salt load in the infeed to wastewater plants
- No over-acidification of the wastewater due to the flat neutralization curve
- No corrosion of the system components
- Safe, simple storage and use of the carbon dioxide
- The best economical and ecological alternative

## Areas of use

The carbon dioxide can treat alkaline wastewaters for most industries, including:,

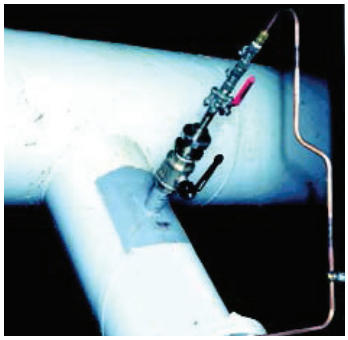
- Beverage
- Dairies and butcheries
- Bakery and confectionery
- Electroplating
- Cement and concrete
- Paper and cellulose
- Leather
- Textile
- Laundries and dye works
- Photo-chemical

## The addition method

The gaseous carbon dioxide is added to the wastewater using the SOLVOCARB® methods developed by Linde:

- SOLVOCARB®-B method
  Carbon dioxide enters via finely perforated aeration hoses
- SOLVOCARB®-D method
  Carbon dioxide enters via ball-head nozzles
- SOLVOCARB®-R method
  Carbon dioxide enters via special reactors

SOLVOCARB® - B

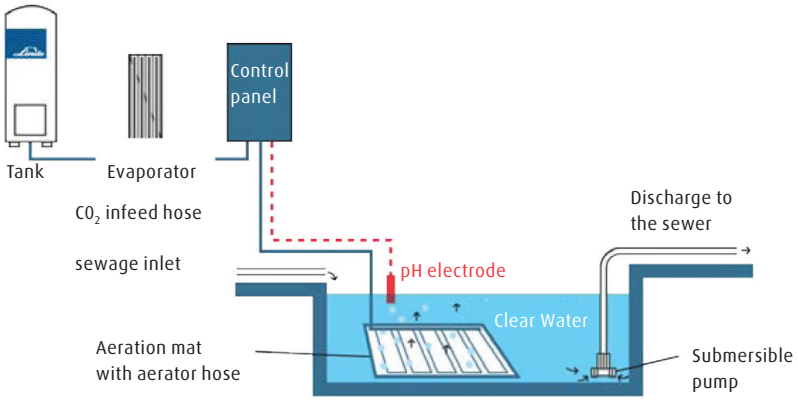


SOLVOCARB® - D

SOLVOCARB® - R

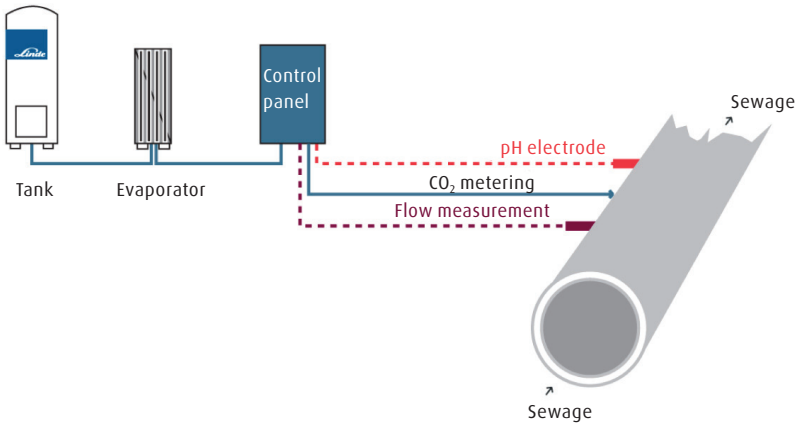
## SOLVOCARB®- B method

$CO_2$ ingress via aeration hoses made of elastic and resistant plastic installed on the bottom of the tank



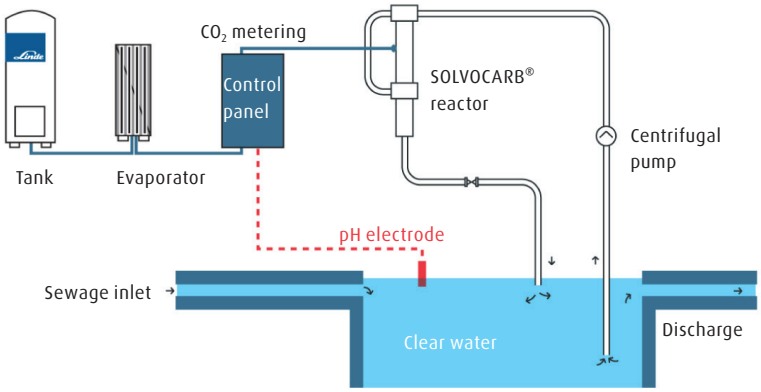

## SOLVOCARB®- D method

$CO_2$ ingress via ballhead nozzles directly into the sewage pipe




## SOLVOCARB®- R method

$CO_2$ ingress via reactors connected in the main flow or the secondary flow




## Why Linde

Linde is a world-leading industrial gas organization that offers a variety of gas products and services that improve quality and enhance environmental performance. Linde tailors solutions to meet the unique needs of each customer and their facility.

Linde North America, Inc.
575 Mountain Ave., Murray Hill, NJ 07974 USA
Phone +1.800.755-9277, sales.lg.us@linde.com, www.lindeus.com, www.lindewatertreatment.com



1937_0912