

MH53S, THE NEUTRALIZATION SOLUTION FOR ACIDIC INDUSTRIAL WASTEWATER

Wastewater management

To comply with effluent specification, or to meet biological and chemical reactions specification, pH control is crucial. Industrial sites use alkali to reach for example the 5,5 to 8,5 pH emission window, or to 6,7 to 7,5 pH window for biogas generation.

TIMAB Magnesium offers **MH53S**, a solution that is economical, non-dangerous and stable, using magnesium hydroxide in suspension as the active component.



Traditional neutralization methods using caustic soda lead to drawbacks such as:

- HSE risk for the operators in handling the dangerous good,
- Risk for the biology in case of overdosing,
- Difficult pH management.

The use of **MH53S** as the alternative will solve all these issues. The product is classified as non-dangerous, and its remanence will allow to keep the pH stable over a longer time compared to strong alkali. This MH53S buffer capacity is key, especially with highly fermentable effluent.



KEY ADVANTAGES

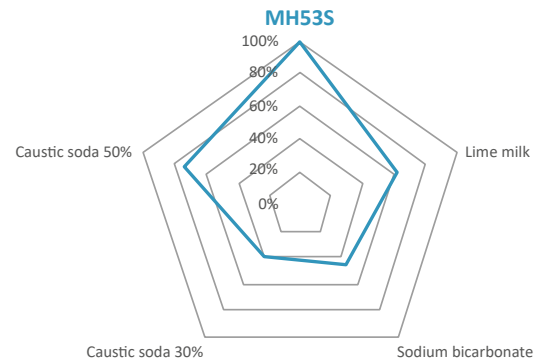
- > A more stable pH
- > A non-dangerous product
- > A more economical solution
- > Better effluent quality
- > Lower delivery carbon footprint

MH53S PROPERTIES

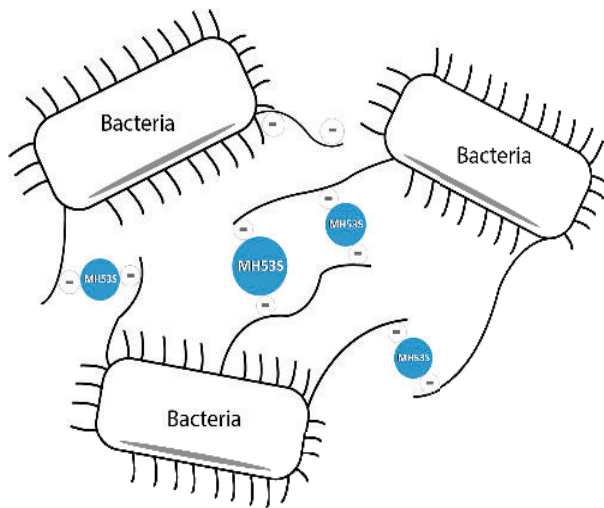
Alkalinity

MH53S is the largest source of alkalinity on the market and buffers all kind of effluent variations.

The alkalinity is the property to resist to pH changes. The alkalinity gives strength to single solution buffer.



Coagulation



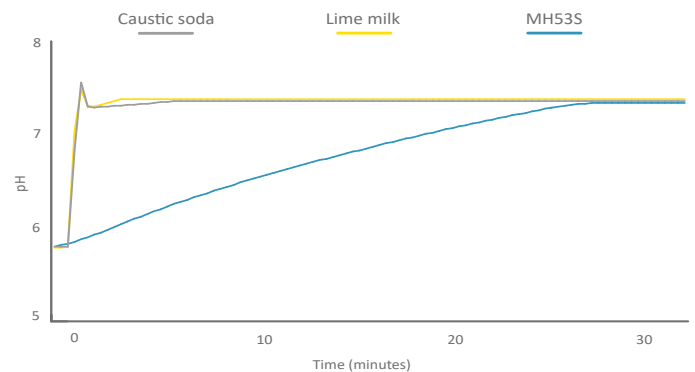
The magnesium from the MH53S forms double bonds with colloids produced by the bacteria.

The divalent property of magnesium prepares the coagulation and flocculation of colloids prior to any treatment with iron chloride or polymers.

Its coagulation strength is **10 times bigger** than with the sodium coming from the caustic soda. Our experience shows an improvement of **TSS by 20 to 40 %** and of **COD by 5 to 20%.**

Controlled neutralization

For any pH starting point, 30 minutes are required to reach the specific pH. Unlike caustic soda or lime milk, no exotherm is noticed at the injection point with MH53S. This preserves the biology locally.



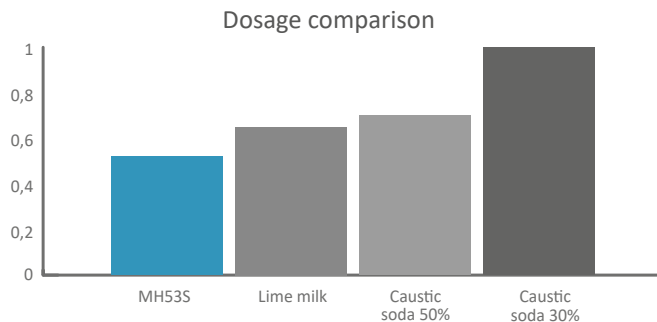
Stability

MH53S is a specially formulated stable suspension. It will remain in suspension for 4 weeks. It is very easy to keep and to put back the suspension in an homogeneous state. Even after 12 months without agitation, any sedimentation can be easily agitated into suspension initial state.

TIMAB Magnesium recommends agitation of one hour per day to maintain a constant homogeneity of the suspension.

AN ECONOMICAL SOLUTION

◆ DOSAGE



MH53S is highly concentrated in hydroxide ions, which reduces dosage with 50% compared to 30% caustic soda. This lowers to the same extend alkali delivery frequency. So the industrial site carbon footprint is decreased and the operators have more free time to focus on the plant.

◆ ECONOMICS



20%

MH53S aims to create cost savings up to 20% compared to traditional alkali. For example, one site using 350 tons of 30% caustic soda can get 20 000 EUR per year of savings on alkali consumption.

On top of the alkali savings, we add up the ones coming from the better effluent quality (less TSS, less COD, more stable biogas generation). **These optimizations create savings to exceed 20%.**

SUPPORT IN MH53S USE



TECHNICAL
AUDIT



INDUSTRIAL TRIAL
3 TO 6 MONTHS



CONVERSION TO
MH53S

TRIAL IMPLEMENTATION

TIMAB Magnesium will support with trial implementation by:



PRODUCT STORAGE
SOLUTION



EQUIPMENT:
PUMPING AND AGITATION



DELIVERY FROM CLOSE
WAREHOUSE

ABOUT TIMAB Magnesium

TIMAB Magnesium is a subsidiary of Groupe Roullier. Counting 8200 employees, Groupe Roullier develops added value solutions to ease and improve all its activities: agri-food applications, phosphates, magnesium, packaging, plant nutrition, maritime activities and renewable energy.

At TIMAB Magnesium, we understand our customer's specifics and we propose thereby the products from our large portfolio that fit best to their process and application. As magnesium expert, we have developed unique solution for the whole wastewater chain.



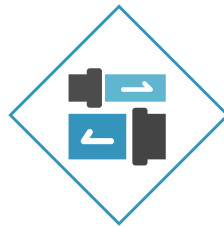
INDUSTRIAL EFFLUENT

Wastewater
neutralization



MUNICIPAL EFFLUENT

Phosphorous
precipitation into
struvite or magnesium
phosphates



SEWER NETWORK

Odor and corrosion
treatment



AGRICULTURAL EFFLUENT

Improving biogas
yield



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