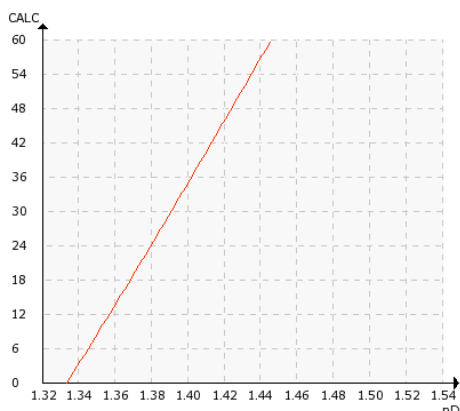


POTASSIUM HYDROXIDE, KOH

Typical end products

Neutralized gas ready for flaring

Chemical curve: Potassium hydroxide R.I. per Conc% b.w. at Ref. Temp. of 20°C



Introduction

The treatment of acidic gas emissions from industrial processes is of utmost importance as these emissions produce serious problems for the environment.

The corrosive acidic gases can have a devastating effect on buildings, vehicles or plant. Moreover, when in contact with human skin can cause harmful results. That is why a proper approach to the removal of acidic gases has been adopted by industrial enterprises.

Application

One of the most commonly emitted by industry acids is the Hydrofluoric acid (HF). HF alkylation unit

generates gas vapors which need to be neutralized prior to their burning in the flare. The presence of HF can create high corrosion rates in flare stacks, moreover, any release of HF into the air must be eliminated. It is primarily due to safety reasons that HF removal must be carried out.

Wet scrubbing is considered to be one of the most common and effective ways to capture acidic gases. In order to remove Hydrofluoric acid a caustic solution must be added, e.g., Potassium Hydroxide (KOH). KOH forms strongly alkaline aqueous solution which acts as a reactive agent neutralizing the acids. The product of the chemical reaction is Potassium fluoride (KF) which is very soluble in water. After the gas has been neutralized, it can proceed to burning in the flare stack.

K-Patents Refractometer PR-23-GP-FM is used to control KOH solution make-up. Fresh KOH is added when it is depleted. An in-line measurement can ensure that there is no HF acid break through going to the flare.

Installation

The K-Patents Process Refractometer PR-23-GP-FM is installed in two locations: in the fresh KOH pipe and in spent KOH solution pipe. The refractometer provides reliable measurements for safety and proper operation. The instrument's digital sensor does not drift, is not affected by bubbles or suspended oils, thus, ensuring measurement stability. Moreover, the refractometer's true digital measurement provides high accuracy. The in-line sensor eliminated sampling and reveals real time data. Finally, the continuous data output allows control over KOH make-up.

OIL REFINING AND PETROCHEMICAL	
APPLICATION NOTE	8.01.06
KOH SCRUBBING OF ACIDIC GAS	

Instrumentation



Description

K-Patents Process Refractometer PR-23-GP is an industrial refractometer for large pipe sizes and tanks, cookers, crystallizers and kettles. Installation through a flange or clamp connection.

Area classification:	Intrinsic safety and hazardous area approvals available.
Measurement range:	Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.