

NOx Scrubbers

What is NOx ?

NOx (oxides of nitrogen) forms when the levels of oxygen are high on the NO₂ scale. Oxides of Nitrogen generate two forms of gas phase emissions. Nitrogen Oxide (NO) which is a colorless gas that is not soluble in water. Nitrogen Dioxide (NO₂) is a visible gas (yellow/orange in color) and has a limited solubility in water.

High NO₂ loadings are generated from processes using nitric acid in metal finishing, metal refining and chemical nitration.

When concentrations of both NO and NO₂ are significant, a multi-stage scrubber system is required to achieve zero visible emissions from the scrubber stack.

The first stage would be required to oxidize the NO to NO₂ and the second stage for NO₂ removal. The oxidation of NO takes place in the first stage with chemical injection into the scrubbing liquor as an oxidizing agent. To achieve complete oxidation of all NO, scrubber units are designed with high liquid re-circulation rates, lower than normal gas velocities and extended packed beds.

NO₂ removal occurs in second stage with more chemistry introduced into the scrubbing solution as a reducing agent. The second stage removes the oxygen from the NO₂ molecule leaving only nitrogen and there by eliminating any visible emissions.

Vanaire Quality & Performance Guarantee

Vanaire has over thirty years experience in the air-pollution control industry and can design, manufacture and deliver a first quality NOx scrubber system that is guaranteed to achieve the highest efficiencies with no visible stack emissions.

Vanaire equipment is manufactured to the highest quality standards from materials such as PVC, CPVC, poly-propylene, solid FRP or dual laminate in accord with all applicable codes and guidelines.

Typical Applications

- Aluminum Anodizing
- Bright-Dip
- Chemical Nitration
- Metals Refining
- High Alloy Steel Etching

