

# NASTYBOY

MEECO<sup>INC</sup>

## NASTYBOY STALKS MOISTURE IN CHLORINE

The NastyBoy, MEECO's new on-line analyzer for moisture in chlorine, stands up to the toughest applications. Combining durability and accuracy, the NastyBoy features an advanced flow system design, using corrosion-resistant materials throughout. The unit functions as a 24VDC, two-wire transmitter, with exceptional mounting flexibility and low installation costs.

A dual NEMA 4X enclosure assembly isolates the electronics from the flow system. Inert gas purge ports prevent build up of hazardous, corrosive gases. Best of all, NastyBoy's field-proven, electrolytic technology provides accurate and reliable measurement -- without field calibration. Based on Faraday's Law of Electrolysis, the NastyBoy's sensor absorbs and electrolyzes moisture down to fractional parts-per-million (ppm's).

How: One hundred percent of the sample moisture is absorbed by a phosphorus pentoxide film that covers two spirally wound electrodes. By applying an electrical potential (voltage) to the electrodes, each absorbed water molecule electrolyzes, generating a finite current. This current is precise and proportional to the amount of absorbed water. It is, therefore, an exact direct measure of the water vapor present in the sample gas. That's why the electrolytic cell requires no calibration and is specific to water.



## NASTYBOY WITH SWEET FEATURES

A continuous, on-line instrument, the NastyBoy offers:

◦ **Calibration-free accuracy.** Based on fundamental science, Faraday's Law, the electrolytic method serves as a recognized means to reliably measure moisture, with no calibration required.

◦ **Unique sample flow system.** All wetted components consist of corrosion resistant materials, reducing maintenance costs while extending product life.

◦ **Two-wire loop powered transmitter.** A simple, flexible means of moisture measurement and output signal communication. The benefits are three-fold: application flexibility, lower installation costs and fast response from the point-of-use.

◦ **Isolated electronics.** By separating the flow system from the electronics, the NastyBoy protects them from corrosion. This, thereby, increases system reliability while reducing maintenance and replacement costs.

◦ **Standard interface.** Designed to provide convenient and low cost system compatibility, NastyBoy transmitters connect to any two-wire, 4-20 mA data acquisition device, with isolated 24 VDC loop power.

◦ **Inert gas purge ports.** Inert gas purge prevents build-up of hazardous or corrosive gas within the instrument. In so doing, you increase system reliability, improve operator safety, and reduce replacement and maintenance costs.

◦ **On-line performance diagnostics.** Without taking your instrument out of service, enjoy the confidence and peace of mind that it's working properly. The simple Delta Flow Procedure, cutting the flow in half to derive approximately half your reading, verifies sensor linearity.

## THE NASTYBOY BEAT

Common in many substances (plastic, vinyl, rubber and more), chlorine constitutes one of the most versatile industrial gases in use today. Yet, chlorine corrodes on contact with even very low concentrations of water. In this way, chlorine forms such corrosives as hydrochloric acid, acidic ferric chlorides and hypochlorous acid. In turn, these acids attack system components, including tubing, condensers and electricals. Result: Trashed out equipment and poor yields.

For best results, the guaranteed absence of moisture is a must when:

1. Chlorine leaves the sulfuric acid dryer. Extremely hygroscopic, sulfuric acid is sprayed into the chlorine gas stream to remove moisture. To assure the process is working properly, analysis at this stage verifies dryer efficiency.

2. Moisture slips through the system. Since most gas-handling systems in chlorine plants operate at vacuum, the chances for moisture infiltration into the system increase. Valves and moving parts are likely targets for leaks that react with chlorine to form ferric chloride build-up in carbon steel pipes and components. Monitoring the moisture level alerts you to potential problems early on, before serious damage occurs.

3. Chlorine is ready for transport. Custody checks require moisture content verification. The NastyBoy provides an accurate measurement on the spot. This insures that the myriad valves and flanges involved in this complex maneuver are solid and secure before chlorine makes its way to the pipeline or tank car.

## NASTYBOY LOWDOWN

### Performance Specifications

Accuracy:	±5% of reading or 0.4 ppm, whichever is greater
Analog output:	4-20 mA into load of 475 ohms max. @ 24 VDC
Bypass flow:	0 to 2 scfh
Monitoring range:	0 to 200 ppm
Minimum detectable value:	Below 1 ppm
Response time:	95% in 5 minutes for step change from 1 to 10 ppm
Sample pressure:	3-50 psig
Sample flow:	100 sccm
Power requirements for heater:	115/220 VAC, 50/60 Hz. Heater assembly prevents liquid formation in sample streams where ambient temperature fluctuates widely. Heater is provided as standard.
Ambient temperatures:	-10 to 60 degrees Celsius

### Mechanical Specifications

Electrolytic cell:	Cl <sub>2</sub> type
External connectors:	Gas connections are 1/8-inch compression type Electrical connections are 1/2-inch conduit
Housing:	Two NEMA 4 boxes
Materials of construction:	Kynar™, Teflon™, stainless steel and glass
Overall dimensions:	19"(h) x 9.25"(w) x 6.09"(d) Flow system box is 11.25"(h) x 9.25"(w) x 6.09"(d) Electrical box is 7.25"(h) x 9.25"(w) x 5.09"(d)
Overall weight:	17 lbs. (Flow system box is 10 lbs. and electrical box is 7 lbs.)
Cool options:	Local digital display CE Mark and FM approval pending

## NASTYBOY HERITAGE

For half a century, MEECO has specialized in electrolytic moisture analyzers for countless facilities around the world.

As the NastyBoy attests, Meeco offers products that answer today's technological challenges-- products backed by a team of professionals dedicated to your satisfaction. Thus, MEECO continues to offer the best quality, timely off-the-shelf- delivery, rapid service and courteous response to technical questions.



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