

PROTEGO® HON Rule Compliance and Solution

HON = Hazardous Organic NESHAP (National Emission Standards for Hazardous Air Pollutants)



Targeted Chemicals in the HON Rule (Hazardous Organic NESHAP)

National Emission Standards for Hazardous Air Pollutants

Chemical

Ethylene Oxide

Benzene

1,3 Butadiene

Chloroprene

Ethylene Dichloride

Vinyl Chloride

[fig. 1] HON Rule Chemical List

WHAT IS THE HON RULE?

The HON Rule refers to Hazardous Organic NESHAP (National Emission Standards for Hazardous Air Pollutants) requires actions by chemical producers to limit emissions of the following compounds to help reduce incidence of cancer near these facilities [fig. 1].

HOW PROTEGO® CAN HELP WITH HON REQUIREMENTS?

- FENCE LINE MONITORING AND EMISSION LIMITS:** In many existing HON regulated operations, the Emergency Relief Valve (ERV) set pressure is low enough where leakage can occur and the Pressure Vacuum Relief Valve (PVRV) blowdown pressure overlaps with the operating range of the pressure loop. LDAR inspection may also indicate leakage from vacuum valves (VRV) as well. Our solution is to apply PROTEGO® 10% lift ERVs and PVRVs to optimize set pressures to keep leakage below 500 ppm and increase the pressure loop's operating range. Achieving set pressure optimization involves working from Maximum Allowable Working Pressure (MAWP) down, applying new ERV and PVRV set points which often yields **3X more operating pressure** and **1.5-1.8X more working vacuum without changing tank pressure or vacuum ratings**. This larger operating window means the PVRV cycles less often (or not at all) and no measurable leakage is obtained from the ERV or the PVRV. The nitrogen and regulated vapor stays in the tank.

- INCREASED FLARE EFFICIENCY:** PROTEGO® Deflagration and Detonation Flame Arresters feature high flow capacity and low pressure drops optimally protect HON vapor streams including **Ethylene Oxide**. Our maintenance friendly designs help insure these critical emission devices continue to operate at peak efficiency for years to come.



PROTEGO® VD/SV-PA Pipeaway PVRV



PROTEGO® Valves and Flame Arresters for Operational Efficiency

EMISSIONS CONTROL AND LEAK TIGHTNESS

- **EPA Method 21 Compliance:** PROTEGO® Valves meet the requirements of EPA Method 21 for leak detection with a threshold of 500 ppm, or less. PROTEGO® Valves have utilized superior sealing technology for decades that inherently ensure leakage rates below 500ppm at 90% of set pressure.
- **Full Lift Technology:** PROTEGO® Valves utilize a 10% overpressure to full lift technology that enables higher set pressures. Increasing the set pressure of the valve allows the tank to be operated at a higher pressure to minimize leakage and maximize the control loop's operating range. Optimizing pressure setpoints with PROTEGO® Valves allows the operating process range to increase by 3X+ versus conventional valves.
- **OGI and LDAR Compatibility:** When properly utilized, PROTEGO® Valves have achieved 100,000 + cycles while maintaining < 500 ppm leak rates. This means HON compliance maintained for years BEYOND installation.



FLAME ARRESTERS FOR HIGH EFFICIENCY FLARES AND THERMAL OXIDIZERS

PROTEGO® Flame Arresters feature a modular center section to allow complete cleaning of the FLAMEFILTER® discs. This allows a lower pressure drop to be maintained with a longer service / PM interval.



TESTING THE TIGHTNESS OF PROTEGO® VALVES ON THE TANK

- PROTEGO® Valves are engineered to operate well below the 500 ppm leak threshold as defined in the EPA Method 21 guidelines. Regular independent testing validates this performance, ensuring compliance with the most rigorous monitoring standards required by the Hazardous Organic NESHAP(HON) rule.
- Proximity switch options are available to allow complete continuous monitoring of valve position status required by some HON Rule applications.
- Durability and Maintenance-Friendly: High-quality materials and innovative designs ensure reliability and reduce maintenance costs.

IMPLICATIONS FOR THE CHEMICAL INDUSTRY

By integrating PROTEGO® Valves, companies can achieve full HON Rule compliance, increase process operating limits and demonstrate sustainability through advanced emission reduction strategies.

If you have any questions or issues regarding HON rule compliance, please contact our expert team.
We are happy to help you.

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