

NATCO BTEX BUSTER

Emission control system

APPLICATIONS

- Elimination of benzene, toluene, ethylbenzene, and xylene (BTEX) and volatile organic compound (VOC) emissions

ADVANTAGES

- Natural draft self-regulating system that does not require any moving pieces of equipment
- Compliance with Federal Regulation 40 CFR part 63, LAC 111.2116, and LAC 33:111 chapter 51
- Removal efficiency greater than 99.7%[†]
- Reduced fuel gas consumption and recovery of saleable liquid hydrocarbons
- In-line flash arrestor, high-level switch, pressure safety valve, and gas shutdown valves
- Field-proven burner products and pneumatic pump that handles aromatic hydrocarbons
- Cold-weather design that eliminates freezing problems associated with cold climates
- Experienced staff and worldwide locations available 24/7



The NATCO BTEX BUSTER system's cold-weather design eliminates freezing problems associated with cold climates.

Under common operating conditions, BTEX and VOCs are emitted into the atmosphere during glycol regeneration. The NATCO BTEX BUSTER* emission control system provides a BTEX removal efficiency greater than 99.7%, helps recover and collect saleable liquid hydrocarbons, and prevents the loss of expensive fuel gas from glycol reconcentrator vent emissions.

The system was designed using the Environmental Protection Agency–approved GRI-GLYcalc™ computer simulation program with a flash-gas separator in the glycol regeneration process.

Performance

- The cost-effective system is designed to assist operators in reducing BTEX and VOC emissions below the accepted levels and complies with federal and state environmental regulations.
- The NATCO BTEX BUSTER system can pay for itself by recovering saleable hydrocarbon liquids and fuel gas. By condensing troublesome glycol reconcentrator vapors and routing flash gas back to the reconcentrator fuel gas inlet for burning, the unit reduces emissions during glycol plant dehydration processing.
- The system incorporates field-proven burner accessories to help prevent sooting and backpressure on your regeneration system.
- It also features a design to eliminate potential freeze-up problems when operating in severe cold climates.
- Schlumberger offers the NATCO BTEX BUSTER system in standard sizes to accommodate most customer needs. Our units are backed by Schlumberger replacement parts, technical assistance, and service—available 24 hours a day.

[†] Certain gas streams contain more BTEX and VOCs than represented by GRI-GLYcalc. Consult with Schlumberger for system evaluation, equipment sizing, and application to ensure conversion efficiency.

NATCO BTEX BUSTER

How it works

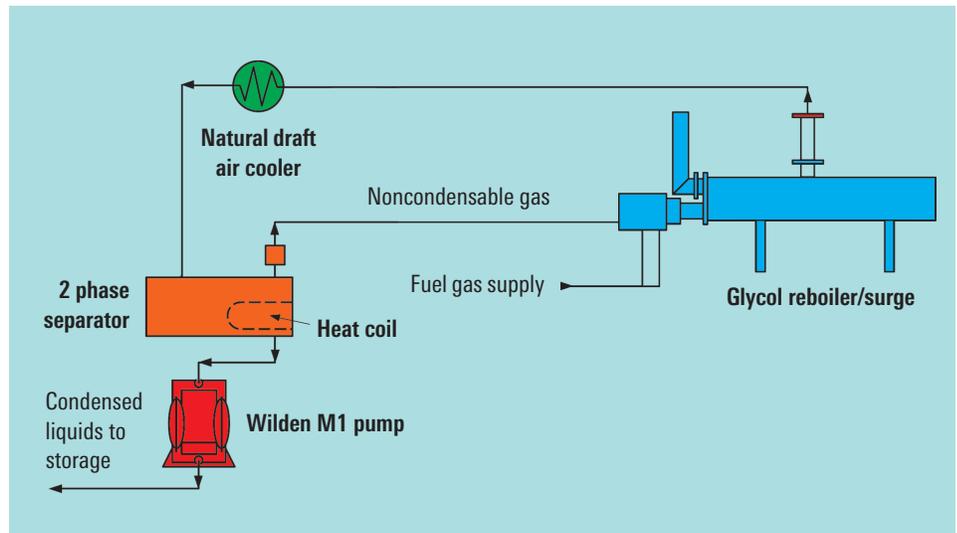
The NATCO BTEX BUSTER emission control system uses a relatively simple process that is designed to maintain greater than 99.7% removal of BTEX and VOC emissions.

The vapors emitted from the glycol still column are cooled in the natural draft air cooler to temperatures below 120 degF [49 degC].

The condensed liquids are collected in a small two-phase separator and pumped to customer storage. Noncondensable gases from the separator are piped through an in-line flash arrestor and then burned in the glycol reboiler firebox to achieve an overall minimum destruction efficiency of 99.7%[†] and greater.

Built-in safety features

The NATCO BTEX BUSTER system is engineered with proper controls for safe operation and long service life. These include an in-line flash arrestor, separator high-level switch, pressure safety valve, and gas shutdown valves for high reboiler bath temperatures. It also incorporates field-proven burner accessories that help to prevent typical sooting and backpressures.



NATCO BTEX BUSTER skid unit diagram.

Specifications

Standard BTEX unit	Reconcentrator duty, Btu/h	Glycol pump, galUS/h	Max. capacity water [‡] , lbm/d	Noncondensable vapor [§] , scf/h	Cooler duty ^{††} , Btu/h
150	75,000	40	273	7	30,000
150	150,000	40	273	10	30,000
250	250,000	90	1,216	27	51,000
375	375,000	210	1,807	45	76,000
550	550,000	210	2,650	60	112,000
750	750,000	450	3,615	100	152,000

[†] Standard BTEX: performance of unit is based on a noncondensable vapor higher heating value greater than 400 Btu/ft³ and less than 1,800 Btu/ft³ and a glycol circulation rate of no more than 3 galUS/lbm of water removed.

[‡] Maximum capacity of water per day represents the maximum capacity of water in pounds per day for each standard reboiler size based on a glycol circulation rate of 2 galUS of glycol per pound of water removed.

[§] Noncondensable vaporday: maximum noncondensable vapor rate was calculated with the GRI-GLYcalc computer simulation program with a flash-gas separator used in the glycol regeneration process and a BTEX concentration in the inlet gas stream of no more than 700 ppm. Using adiabatic combustion calculations, a minimum of 99.7%^{††} of these noncondensable vapors are destroyed.

^{††} Cooler duty: cooler duty was calculated based on a prevailing wind speed of 3 mi/h and a maximum ambient temperature of 100 degF [38 degC].

^{†††} Certain gas streams contain more BTEX and VOCs than represented by GRI-GLYcalc. Consult with Schlumberger engineers for system evaluation, equipment sizing, and application to ensure conversion efficiency.

Note: Schlumberger is not responsible for the disposal of any condensed liquids associated with its BTEX BUSTER emission control systems.

slb.com/gas-treatment

*Mark of Schlumberger

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