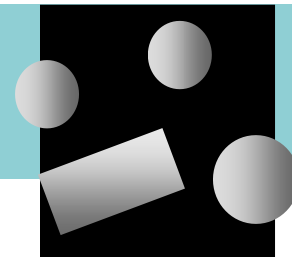


TDA Research, Inc.



BULK NATURAL GAS DESULFURIZATION



FUEL CELL APPLICATIONS NATURAL GAS



LIQUEFIED PETROLEUM GAS



BIO GAS



SULFATRAP™ SORBENTS FOR DESULFURIZATION OF HYDROCARBONS

Effective utilization of natural gas, liquefied petroleum gas (LPG), and biogas (anaerobic digester gas - ADG) in fuel cell applications requires effective removal of sulfur impurities (naturally occurring sulfur compounds and sulfur bearing odorants) to prevent them from degrading the performance of the fuel cell stacks and poisoning of the catalysts used in the fuel processor.

TDA has developed SulfaTrap™ sorbents with DOE SBIR funding to remove organic (sulfides, mercaptans, THT, disulfides and trisulfides) and inorganic (H₂S, COS) sulfur compounds from various gas and liquid hydrocarbons. Our sorbents reduce the sulfur level in the fuel to very low levels (low ppbvs) to ensure maximum protection to the fuel cell.

FEATURES

- High selectivity and removal efficiency to all sulfur species (reduce sulfur levels to less than 5 ppbv)
- High capacity (over 5% wt. saturation capacity)
- Regenerable operation (oxidizing (e.g. air), reducing (e.g., H₂ or natural gas) or inert gases (e.g., N₂) can be used for regeneration)
- Tolerance to gas contaminants (moisture, heavy hydrocarbons, CO₂)
- Easy disposal (no flammability, toxicity or pyrophorocity)

PRODUCT	APPLICATION
SulfaTrap™-R2	Natural gas desulfurization, high moisture ⁽¹⁾
SulfaTrap™-R5	COS removal
SulfaTrap™-R6	Natural gas desulfurization, low moisture ⁽²⁾
SulfaTrap™-R7	Low cost bulk natural gas desulfurization
SulfaTrap™-R8	Biogas desulfurization, polishing bed
SulfaTrap™-P	LPG desulfurization
SulfaTrap™-HRG	Hot reformat gas desulfurization ⁽³⁾
SulfaTrap™-HDS	Hydrodesulfurization of natural gas

⁽¹⁾ up to 4,000 ppmv H₂O ⁽²⁾ up to 150 ppmv H₂O ⁽³⁾ up to 900°C

Contact: Gökhan Alptekin, galptekin@tda.com, Ph: 303 9402349
TDA Research, Inc.
12345 West 52nd Ave, Wheat Ridge, CO 80033