Preventing VOC leaks in sustainable industrial operations

By Angelica Pajkovic and Tim Goedeker

askets and packing solutions can play a significant role in advancing sustainable industrial operations by focusing on reducing fugitive emissions from valves and flanged pipe connections. By preventing the escape of volatile organic compounds (VOCs), valve packing, such as Teadit's 2848 or 2236, helps decrease the overall environmental impact of industrial processes. Proper packing selection results in fewer VOCs released into the atmosphere. Low-emission packings are certified to meet stringent requirements of leakage, with some as low as 2 parts per million.

Reduced emissions also mean lower health and safety risks for on-site personnel, as VOCs can be hazardous when inhaled or exposed over time. This reduction is crucial in minimizing the effect of industrial operations on climate change.

In addition to enhancing safety, these solutions help conserve valuable resources. Preventing VOC leaks avoids the wasting of the materials involved in the production and transport of process media, as well as the energy used to move and process it. By containing these elements within the system, sealing technologies like Teadit's 913M spiral wound gasket maximize process efficiency and resource utilization, ultimately supporting the industry's shift toward more sustainable practices.

There are several solutions on the market today that arrest fugitive VOC emissions to well under 100 ppm. Facilities and operations should consider the following:

• How much water is used in the production of the solutions?

- What can be done to reduce the freshwater use footprint?
- Can the amount of freshwater be reduced via recycling or can other types of water — rainwater, treated wastewater — be used instead of freshwater?
- -- be used instead of freshwaters
- How much waste is generated in the



Gaskets and packing solutions can play a significant role in advancing sustainable industrial operations by focusing on reducing fugitive emissions from valves and flanged pipe connections Credit: engineer — studio,stock.adobe.com.

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production of the solutions?

- What can be done to reduce the footprint of waste generated?
- Can packaging be reduced to avoid excess waste?
- How is nature (land primarily) impacted by the production of the solutions?
- If fugitive emission solutions use

minerals from the earth, are there other minerals that could be used to produce an equivalent product with less impact on nature, i.e., less invasive mining or mineral capture processes.

Sustainability is not just the use and care of air, but also the use of water, the disposal of wastewater, the creation of waste, and care of nature and biodiversity. As the common goal is sealing for a safer and greener tomorrow, it is important that the world begin to understand and adopt sustainable practices while manufacturing products, such as gaskets and packing, that aim to increase sustainability.

Proactive sealing manufacturers with increasingly efficient, reliable, and responsible processes should be constantly looking for ways to reduce their impact on the environment and the earth.

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