



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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Fact Sheet

Vantage Specialties, Inc. Application for Construction Permit and Proposed Draft Permit October 2019

Source:

Vantage Specialties, Inc.
3938 Porett Drive
Gurnee, Illinois 60031

Nature of Source:

Vantage Specialties, Inc. (Vantage) manufactures ingredients used in personal care, food and industrial products. The reactors in the alkoxylation area of the plant use ethylene oxide as a raw material. The ethylene oxide is piped into sealed reactors along with other raw materials. The ethylene oxide reacts with the other raw materials to form the desired chemical products. This consumes the ethylene oxide with only a small amount of unreacted ethylene oxide left, which is then vented to a scrubber followed by a dry bed absorption device. This dry bed device was installed in April 2019 to further reduce emissions.

Ethylene oxide is received at the plant in pressurized railroad tanks cars that are built and rated for transport of ethylene oxide. The ethylene oxide is transferred to a pressurized storage tank that is vapor balanced with the railcar during unloading, with displaced vapor returned to railcar and not vented.

Piping for the unloading of railcars, the storage tank and the alkoxylation area includes components such as pumps, pressure relief devices, valves, connectors and flanges that can be sources of fugitive emissions of ethylene oxide. Under state and federal rules, the components containing ethylene oxide are subject to requirements for periodic operational monitoring to identify leaks and requirements for timely repair of any leaks. Since May 2019, Vantage has implemented an enhanced leak detection and repair (LDAR) program with more frequent monitoring and a more stringent criterion for a leaking component, which has served to further reduce fugitive emissions.

Application for Permit and Proposed Draft Permit:

Vantage has applied for a construction permit that would set an annual cap on emissions of ethylene oxide from the plant as required by Public Act 101-0023, which took effect June 21, 2019. The Illinois EPA Bureau of Air has drafted a permit that would set an annual cap on emissions of ethylene oxide from the plant of 110 pounds per year of which no more than 60 pounds may be fugitive emissions from components. The permit would also include conditions that would address how compliance with the cap on emissions is to be determined, including requirements for monitoring, recordkeeping and reporting. This permit would act to control or reduce ethylene oxide emissions from the plant.

The Illinois EPA is holding a public meeting and is accepting input on the draft permit.

Contact for More Information:

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