



Asphalt Emulsifiers, Emulsion Stabilizers and Additives

Overview

Through its chemical product offerings and technologies, Ingevity seeks to purify, protect and enhance the world around us. Our Pavement Technologies products are used in the pavement construction sector to allow reductions in energy usage and worker and public exposure to construction emissions, and cost effective construction and preservation of public road network assets.

Uses and applications

Certain asphalt (also called bitumen) pavement construction and maintenance techniques utilize asphalt binders in the form of a water-based asphalt emulsion. These emulsions provide a method to deliver asphalt binder to a pavement during the construction process that does not require the use of excessive heating or volatile petroleum solvents, in a liquid form that is easier and safer to use and apply.

Ingevity's asphalt emulsifiers, stabilizers and additives are used by qualified manufacturing personnel at plant sites around the world to manufacture asphalt emulsions. The chemical composition supplied by Ingevity may constitute less than 2% of the total asphalt emulsion produced, but allows the emulsion to remain stable in the construction process, to break and cure at the needed rate in the construction process, and can provide ongoing durability benefits to the pavement for its entire life cycle.

Physical/chemical properties

Liquid or dry powder

Amber to dark brown

Bland to ammonia-like odor

Health effects

Several asphalt additive chemistries can be either irritating or corrosive to the skin and eyes. In some cases, these chemistries may also exhibit skin sensitization and in others, respiratory tract irritation is possible. Dependent on the specific hazardous components and concentration the health effects will vary. Safety data sheets (SDS) are provided to communicate the specific hazards associated with products to ensure appropriate handling.

Environmental effects

Several asphalt additive chemistries can be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. As shown in the exposure and risk management sections below, great care is taken to prevent environmental impact during the manufacture and use of the product by our customers.

Exposure and risk management recommendations

Products are used by qualified personnel in secure manufacturing environments, and are typically stored and used in closed systems such as bulk transport (*e.g.* tank trucks or railcars), bulk storage (*e.g.* stationary tanks), packages (*e.g.* drums or tote bins), piping systems and process tanks.



Human and environmental exposure may come from airborne dust exposure to dry powder products, vapor exposure to liquid products in open systems, or skin or other physical contact or ground and water contact as a result of handling or spills.

In order to limit risk associated with human or environmental exposure, understand the hazards and risks associated with each product by reviewing the product safety data sheet (SDS) before use. Use engineering controls and personal protective equipment (PPE) that excludes exposure to the product where possible.

Use products in closed systems. Plan for spill containment and cleanup to include physical containment (*e.g.* diked areas, absorbent booms) and removal/disposal. Use adequate ventilation or vapor exclusion equipment to prevent vapor or dust exposure to the user.

Where engineering controls are unable to sufficiently reduce exposure risk, user PPE may be needed. Impermeable clothing, eye and face protection, and in rare cases, respiratory protection may be necessary.

Users of the product should not eat, drink or smoke where chemicals are stored or in use. After use, wash hands and exposed skin with soap and water. If directly exposed to the product, follow the recommendations on the product SDS.

Conclusion

Under conditions of normal use by qualified personnel, the asphalt emulsifiers, emulsion stabilizers and additives offered by Ingevity's Pavement Technologies group are not expected to pose a significant risk to human health or the environment.

No warranties of use or otherwise are expressly made or implied from this information. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown hazards and should be used with caution.