Product Safety Assessment

ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings


Select a Topic:
Names
Product Overview
Manufacture of Product
Product Description
Product Uses
Exposure Potential
Health Information
Environmental Information
Physical Hazard Information
Regulatory Information
Additional Information
References

Names
Trade names and grades for these products include, but are not limited to, the following:

- ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings
- ADCOTE™ 35D9 Primer
- ADCOTE™ 35F1 Heat-Seal Coating
- ADCOTE™ 35F1E Heat-Seal Coating
- ADCOTE™ 35K1 Heat-Seal Coating
- ADCOTE™ 35K1E Heat-Seal Coating
- ADCOTE™ 35K2 Heat-Seal Coating
- ADCOTE™ 35K2E Heat-Seal Coating
- ADCOTE™ 2730-2B Heat-Seal Coating

Product Overview

ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are a family of vinyl solutions supplied as clear, yellow or amber-colored liquids with no odor.\(^1\,^2\,^3\) For further details, see Product Description.

ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are used in various packaging applications, including blister packs and lidding for medical and food products.\(^4\) For further details, see Product Uses.

Exposure can occur either in facilities that manufacture these products or in the various industrial or manufacturing facilities that use these products. ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are not sold directly to consumers, but as they are used in packaging applications, consumers may come into contact with the cured material. Products approved for food contact or medical packaging comply with applicable regulatory standards to ensure that they are safe for these applications.\(^5\) For further details, see Exposure Potential.

Exposure to the individual components or uncured product can cause the following effects. Eye contact with solvents in these products may cause moderate to severe eye irritation, temporary corneal injury, pain, tearing, or permanent eye injury. Skin contact with the solvents in these products may cause moderate skin irritation and blistering. Prolonged or repeated skin contact may cause defatting and drying of the skin, which can lead to irritation and dermatitis. Some components may cause an allergic skin reaction. This product may be harmful if swallowed. Inhalation of solvent vapor or mist may cause irritation, other adverse effects, and even death.\(^6\) For further details, see Health Information and the relevant Safety Data Sheet.
• The vinyl and acrylic polymers in ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are expected to degrade slowly in the environment. Due to their high molecular weight, the polymers are not expected to accumulate in the food chain and they are not expected to be toxic to fish or other aquatic organisms. The solvents used in the products range from inherently biodegradable to readily biodegradable, have a low tendency to bioaccumulate in the food chain, and range from moderately toxic to practically non-toxic to aquatic organisms on an acute basis. For further details, see Environmental Information.

• ADCOTE 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are stable under recommended storage and use conditions. Because of the associated solvents, these products are flammable. Avoid contact with strong oxidizing agents. For further details, see Physical Hazard Information.

Manufacture of Product
• Locations – ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are manufactured in various global locations by Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, and its global affiliates.
• Process – ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are produced using proprietary processes and materials.

Product Description
ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are vinyl solutions supplied as clear, yellow or amber-colored liquids. These products range from 30% to 51% solids.

ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings typically contain vinyl and acrylic polymers blended with solvents and other components, including methyl ethyl ketone, acetone, toluene, phosphoric acid, vinyl acetate, and ethyl acetate.

Product Uses
ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are designed for packaging applications that require excellent adhesion to aluminum foil and paper substrates. These coatings may be used in lidding and pill blister packaging applications for medical and food products, and comply with applicable regulations set by the U.S. Food and Drug administration (FDA) and European Union (EU) Directives concerning food contact.

Exposure Potential
• ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are used in the production of industrial and consumer products. Based on the uses for these products, individuals could be exposed through:
  • Workplace exposure – Exposure can occur either in facilities that manufacture ADCOTE 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings or in the various industrial or manufacturing facilities that use these products. These products are produced, transported, stored, and consumed in closed systems. Those working with ADCOTE 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit exposure. See Health Information.
  • Consumer exposure to products containing ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings – Dow does not sell ADCOTE 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings for direct consumer use, but they are used in food-contact and medical packaging applications, so consumers may come into contact with the cured material. Products approved for food contact or medical applications comply with applicable regulations set by the U.S. FDA and/or EU Directives concerning food contact. See Health Information.
  • Environmental releases – If released, the vinyl and acrylic polymers will tend to float in water and are expected to be removed in biological wastewater treatment plants by adsorption to biosolids. The solvents will exhibit low to moderate tendencies to volatilize from water. In air, the solvents will degrade by reaction with photochemically produced hydroxyl radicals. Since these solvents range from inherently biodegradable to readily biodegradable, they are expected to be removed from water and soil environments.
including biological wastewater treatment plants. In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. Respiratory protection is necessary for cleaning up spills and leaks. All sources of ignition should be immediately eliminated. Spilled product should not be flushed into surface water or sanitary sewer systems. Spilled material should be collected with non-combustible absorbents (e.g., sand, earth, diatomaceous earth, vermiculite) and placed in containers for disposal according to applicable government regulations. See Environmental, Health, and Physical Hazard Information.

• **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the product should be captured, collected, and reprocessed or disposed of according to applicable governmental regulations. Unnecessary personnel should be evacuated from spill area. All sources of ignition should be immediately eliminated. Sparking tools should not be used. Only explosion-proof equipment should be used and all containers and handling equipment should be grounded and bonded. An approved respirator is recommended for emergency work. Non-combustible absorbents such as sand, earth, diatomaceous earth, or vermiculite should be used to collect the spilled product. See Environmental, Health, and Physical Hazard Information.

• **In case of fire** – Any unnecessary entry into the area should be denied and the use of unmanned hose holders should be considered. Water spray, carbon-dioxide or dry-chemical extinguishers, or foam should be used to fight the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Vapors are heavier than air and may travel to a source of ignition and flashback. Vapors should be kept out of sewers. Closed containers may rupture due to pressure build-up when exposed to heat or fire. Fire water should be kept out of waterways and sewers to minimize the potential for environmental damage. Emergency procedures should be carefully followed. See Environmental, Health, and Physical Hazard Information.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.
Environmental Information

Environmental information for ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings is summarized on the relevant Safety Data Sheets. It is important to note that environmental risks associated with individual products may vary based on their formulation and/or intended use. The Safety Data Sheet is the preferred source for specific environmental information.

The high molecular weight vinyl and acrylic polymers in ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings are insoluble in water and nonvolatile. If released, the polymers would float in water and eventually bind to soil, suspended solids, or sediment. Although the polymers are essentially non-biodegradable, they would be expected to degrade slowly in the environment, including degradation by physical action or by exposure to sunlight. The polymers would likely be removed in biological wastewater treatment facilities by adsorption to biosolids. The polymers are not expected to accumulate in the food chain due to their high molecular weight, and they are not expected to be toxic to fish or other aquatic organisms on an acute basis.

The solvents in ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings have moderate to high volatility and range from insoluble to miscible in water. If released, the solvents will have a low to moderate tendency to evaporate from water with minimal tendency to bind to soil and sediment. These solvents are unlikely to persistent in the environment. In the atmosphere, they would degrade within days by reaction with photochemically produced hydroxyl radicals. The solvents also range from inherently biodegradable to readily biodegradable, which suggests that they will be removed from water and soil environments, including biological wastewater treatment plants. These solvents are not expected to accumulate in the food chain and they range from moderately toxic (EC50/LC50 between 1 and 10 mg/L) to practically non-toxic (EC50/LC50 > 100 mg/L) to aquatic organisms on an acute basis.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Physical Hazard Information

ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings contain solvents that require strict adherence to recommended storage, handling, and firefighting procedures. These products are extremely flammable. Containers should be kept tightly closed in a well-ventilated area away from sources of heat and ignition. Containers may be hazardous when empty. Sufficient air ventilation should be provided when handling.

Vapors are heavier than air and may travel to a source of ignition and flash back. Heated product may form flammable or explosive mixtures with air. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat. Contact with strong oxidizing agents should be avoided.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information

- Request Safety Data Sheets and Technical Data Sheets from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (http://www.dow.com/assistance/dowcig.htm)
- Technical Data Sheets for the relevant products (accessible at: www.dow.com/products/market/packaging/product-line/adcote/)
  - ADCOTE™ 35K2 Heat-Seal Coating (Technical Data Sheet)
  - ADCOTE™ 35F1 Heat-Seal Coating (Technical Data Sheet)
  - ADCOTE™ 35D9 Primer (Technical Data Sheet)
  - ADCOTE™ 2730-2B Heat-Seal Coating (Technical Data Sheet)
Product Safety Assessment: ADCOTE™ 35 Series Solvent-Based Vinyl Acrylic Heat-Seal Coatings

- ADCOTE™ 35K1 Heat-Seal Coating (Technical Data Sheet)
- ADCOTE™ 35K1E Heat-Seal Coating (Technical Data Sheet)


Back to top

References
4 ADCOTE™ 35F1 Heat-Seal Coating (Technical Data Sheet), Packaging and Converting, Rohm and Haas Company, September 2006, pages 1 and 3.
5 ADCOTE™ 35F1 Heat-Seal Coating (Technical Data Sheet), Packaging and Converting, Rohm and Haas Company, September 2006, pages 1 and 3.
9 ADCOTE™ 35F1 Primer (Technical Data Sheet), Packaging and Converting, Rohm and Haas Company, August 2009, page 1.
14 ADCOTE™ 35D9 Heat-Seal Coating Material Safety Data Sheet, The Dow Chemical Company, January 22, 2007, Composition/Information on Ingredients
15 ADCOTE™ 35K1E Heat-Seal Coating Material Safety Data Sheet, The Dow Chemical Company, July 18, 2011, Composition/Information on Ingredients

™Trademark of the Dow Chemical Company (“Dow”) or an affiliated company of Dow

Created: June 26, 2013

The Dow Chemical Company

Page 5 of 6
NOTICES

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, www.dow.com/homepage/term.asp.