Product Safety Assessment

ADCOTE™ Solution Polyester Industrial Laminating Adhesives


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
- ADCOTE™ Solution Polyester Industrial Laminating Adhesives
- ADCOTE Polyester Laminating Adhesives
- ADCOTE 49R32 Polyester Laminating Adhesive
- ADCOTE 49R34 Polyester Laminating Adhesive
- ADCOTE 76P1-38 Polyester Laminating Adhesive
- ADCOTE 76P10 Polyester Laminating Adhesive
- ADCOTE 76P112 Polyester Laminating Adhesive
- ADCOTE 76R36 Polyester Laminating Adhesive
- ADCOTE 76R36B-33 Polyester Laminating Adhesive
- ADCOTE 76R44 Polyester Laminating Adhesive
- ADCOTE 76R67 Polyester Laminating Adhesive
- ADCOTE 76R69 Polyester Laminating Adhesive
- ADCOTE 89R1T Polyester Laminating Adhesive
- ADCOTE 89R3 Polyester Laminating Adhesive
- ADCOTE 102A Polyester Laminating Adhesive
- ADCOTE 122 Polyester Laminating Adhesive
- ADCOTE 122 HV Polyester Laminating Adhesive
- ADCOTE 123 Polyester Laminating Adhesive
- ADCOTE 502S Polyester Laminating Adhesive
- ADCOTE 503A Polyester Laminating Adhesive
- ADCOTE 503E Polyester Laminating Adhesive
- ADCOTE 503H Polyester Laminating Adhesive
- ADCOTE 1140 Polyester Laminating Adhesive
- ADCOTE 1217D Polyester Laminating Adhesive
- ADCOTE 1640 Polyester Laminating Adhesive
- ADCOTE 1640E Polyester Laminating Adhesive
- ADCOTE 1740 Polyester Laminating Adhesive
- ADCOTE 2140 Polyester Laminating Adhesive
- ADCOTE 3220 Polyester Laminating Adhesive
- ADCOTE 3302 Polyester Laminating Adhesive
- ADCOTE 3840D Polyester Laminating Adhesive
- ADCOTE A3305 Polyester Laminating Adhesive
- ADCOTE A3306 Polyester Laminating Adhesive
- ADCOTE AL44 Polyester Laminating Adhesive
- ADCOTE L64-100 Polyester Laminating Adhesive

Product Overview
- ADCOTE™ Solution Polyester Industrial Laminating Adhesives are formulated polyester resin and solvent solutions. Some products may also contain epoxy resins and antimony trioxide. The products are clear to hazy liquids of varying colors. For further details, see Product Description.
- ADCOTE Polyester Laminating Adhesives are commercial products used in industrial laminating processes. These adhesives are used in laminations requiring high degrees of bond strength, age stability, thermal resistance, chemical resistance, and/or optical clarity. For further details, see Product Uses.

Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Created: June 9, 2014

The Dow Chemical Company

Page 1 of 6
• Exposure can occur either in facilities that manufacture ADCOTE Polyester Laminating Adhesives or in facilities that use these products. Dow does not sell ADCOTE Polyester Laminating Adhesives for direct consumer use. Individuals may come in contact with products that have been manufactured using the adhesives; however, contact with the cured product is not considered to present a significant risk. ³,⁹,¹⁰ For further details, see Exposure Potential.

• The following health information refers to the uncured liquid adhesive components and is primarily associated with the solvents in the mixtures. The cured, end-use polyester laminating adhesives are essentially inert polymer solids and are not considered to present a health risk. Eye contact may cause irritation, corneal damage, or even blindness. Skin contact may cause irritation, reddening, blistering, defatting and dryness. Some solvent(s) may be absorbed through intact skin, resulting in symptoms similar to inhalation. Inhalation of vapor or mist may cause irritation of nose, throat, and lungs, headache, nausea, drowsiness, and loss of coordination. Prolonged or excessive exposure may result in narcosis, pulmonary edema, unconsciousness, coma, or even death. Swallowing may result in gastrointestinal irritation, headache, nausea, dizziness, and drowsiness. Swallowing large amounts may result in unconsciousness, coma, or death. Prolonged or repeated exposure may result in damage to the heart, kidneys, lungs, and liver, central nervous system effects, and blood disorders. Evidence of carcinogenic activity was observed in products containing antimony trioxide. ³,⁹,¹⁰ For further details, see Health Information and the relevant Safety Data Sheet.

• The following environmental effects information refers to the uncured liquid adhesive components and is primarily associated with the solvents in the mixtures. The cured adhesives are expected to be inert in the environment. The liquid polyester components of these products are expected to be inert in the environment. If released to the environment, the solvents in these products would likely evaporate to the atmosphere. Toluene, a solvent in some of these products, is moderately toxic to aquatic organisms on an acute basis (LC⁵₀/EC⁵₀ between 1 and 10 mg/L in the most sensitive species tested). The other solvents are practically nontoxic to aquatic organisms on an acute basis (LC⁵₀/EC⁵₀ greater than 100 mg/L in the most sensitive species tested). ³,⁹,¹⁰ For further details, see Environmental Information.

• Because of the associated solvents, ADCOTE Solution Polyester Industrial Laminating Adhesives are flammable. Keep containers away from heat and sources of ignition. Avoid contact with strong oxidizing agents. Ground all metal containers during storage and handling. ³,⁹,¹⁰ For further details, see Physical Hazard Information.

Manufacture of Product

• Locations – Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, and its global affiliates manufacture ADCOTE™ Solution Polyester Industrial Laminating Adhesives at facilities located in the United States.

• Process – ADCOTE Solution Polyester Industrial Laminating Adhesives are produced using proprietary Rohm and Haas materials and processes.

Product Description

ADCOTE™ Solution Polyester Industrial Laminating Adhesives are formulated polyester resin and solvent solutions. Depending upon the specific formulation, the product may also contain epoxy resins and antimony trioxide. ADCOTE Polyester Laminating Adhesives are clear to hazy liquids of varying colors, with a solvent odor.

Specific products can be used as single-component, thermal-activated coatings, but the majority are used as two-component, dry-bond laminating adhesives. In the two-component system, the ADCOTE polyester laminating adhesive is mixed with a coreactant to provide specific end-use qualities. The applied, two-component adhesives are dried in a forced-air oven to remove volatiles. After drying, the ADCOTE material cures under specified time and temperature conditions prior to use in final end-use applications.

Product Uses

ADCOTE™ Polyester Laminating Adhesives are commercial products used in industrial laminating processes. These products are used in laminations requiring high degrees of bond strength, age stability, thermal resistance, chemical resistance, and/or optical clarity. Applications include a variety of film to film, film to glass, and metal foil to film laminations, including:

• Solar control film
• Industrial heat seal coating
• Ink vehicle base

⁶™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
**Product Safety Assessment: ADCOTE™ Solution Polyester Industrial Laminating Adhesives**

**Back to top**

**Exposure Potential**[^1]

ADCOTE™ Solution Polyester Industrial Laminating Adhesives are used for industrial laminating processes. Based on the uses for these products, individuals could be exposed through:

- **Workplace exposure** – Exposure can occur either in facilities that manufacture ADCOTE Polyester Laminating Adhesives or in the various industrial, professional, or manufacturing facilities that use these products. They are produced, distributed, and stored in closed systems. Those working with ADCOTE Polyester Laminating Adhesives 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 ADCOTE Solution Polyester Industrial Laminating Adhesives** – Dow does not sell ADCOTE Polyester Laminating Adhesives for direct consumer use. Individuals may come in contact with products that have been manufactured using the adhesives; however, contact with the cured product is not considered to present a significant risk. See Health Information.

- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. These products are not water-soluble. Do not flush into surface water or sanitary sewer systems. Ensure adequate ventilation. Eliminate all sources of ignition immediately. Use only explosion-proof, nonsparking equipment. For small spills, ADCOTE Polyester Laminating Adhesives should be absorbed with noncombustible materials such as sand, earth, diatomaceous earth, or vermiculite. The solvents in these products are volatile and will tend to partition to the atmosphere, which may create an inhalation risk. These products are considered moderately toxic (LC_{50}/EC_{50}, between 1 and 10 mg/L in the most sensitive species tested) to practically nontoxic (LC_{50}/EC_{50}, greater than 100 mg/L in most sensitive species tested) to aquatic organisms on an acute basis. 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. Ensure adequate ventilation. Eliminate all sources of ignition immediately. Use only explosion-proof equipment; ground and bond all containers and handling equipment. Do not flush into surface water or sanitary sewer systems. Spills of these products can present a slipping hazard. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Vapors can travel to a source of ignition and flash back. Heated product can form flammable or explosive vapors with air. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat. Cool closed containers exposed to fire with water spray. Keep fire water out of waterways and sewers. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

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

**Health Information**[^1]

Health information for ADCOTE™ Solution Polyester Industrial Laminating Adhesives is provided on the relevant Safety Data Sheet. Health risks associated with individual products may vary based on formulation or intended use. The Safety Data Sheet is the preferred source for specific health information. General health information for the uncured, liquid, products appears below. These health effects are primarily associated with the solvent(s) contained in the products. The cured, end-use products are essentially inert polymer solids and are not considered to present a health hazard.

**Eye contact** – Contact may cause moderate to severe irritation with tearing and pain. Corneal injury, corneal opacity, conjunctivitis, corrosion, or even blindness may occur.

**Skin contact** – Contact may cause moderate skin irritation, reddening, and blistering. Prolonged skin contact may cause defatting and drying of skin. Some solvent(s) can be absorbed through intact skin, resulting in symptoms similar to inhalation exposure.

**Inhalation** – Inhalation of vapor or mist may cause irritation of nose, throat, and lungs, headache, nausea, drowsiness, and loss of coordination. Prolonged or excessive exposure may result in narcosis, pulmonary edema, unconsciousness, coma, and even death.

[^1]: Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow

Created: June 9, 2014
Ingestion – These products may be harmful if swallowed. Swallowing may result in gastrointestinal irritation, headache, nausea, dizziness, or drowsiness. Swallowing large amounts may result in unconsciousness, coma, or death.

Repeated exposure – Prolonged or repeated exposure may result in damage to the heart, kidneys, lungs, and liver, central nervous system effects, and blood disorders.

Other – Evidence of carcinogenic activity has been observed for those products containing antimony trioxide.

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

Environmental Information

ADCOTE™ Solution Polyester Industrial Laminating Adhesives are blends of several components. The Safety Data Sheet is the preferred source for specific environmental information. General environmental information for the uncured, liquid polyester laminating adhesives appears below. Cured polyester laminating adhesives are expected to be inert in the environment.

The liquid polyesters in ADCOTE Laminating Adhesives are nonvolatile, high molecular weight polymers; they are expected to be inert in the environment. If released to soil or water, the polyester components would likely bind to soil, suspended solids, or sediments and would be removed by adsorption to biosolids during typical wastewater-treatment processes. Although the polyester components are essentially nonbiodegradable, they would be expected to degrade slowly in the environment, including degradation by physical action or by exposure to sunlight. The polyester components are not expected to accumulate in the food chain (low bioconcentration potential). There are no known ecotoxicological effects associated with the polyester components. They are expected to be practically nontoxic (LC₅₀/EC₅₀ greater than 100 mg/L in the most sensitive species) to aquatic organisms on an acute basis.

If released to soil or water, the solvents in ADCOTE Laminating Adhesives would likely evaporate to the atmosphere. The solvents are not expected to partition to soil. The solvents are biodegradable (86% or greater biodegraded at 10 days per OECD 301A screening test). Toluene, a solvent in some of these products, is moderately toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 1 and 10 mg/L in the most sensitive species tested). The other solvents are practically nontoxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ greater than 100 mg/L in the most sensitive species tested).

Some of these products contain antimony trioxide. Aquatic toxicity is unlikely due to its low solubility in water. If released to soil or water, antimony trioxide would partition to soil or sediments.

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

Physical Hazard Information

Because of the associated solvents, ADCOTE™ Solution Polyester Industrial Laminating Adhesives are flammable. Indoor storage should be limited to approved areas equipped with automatic sprinklers. Keep containers away from heat and sources of ignition. Keep containers tightly closed in a dry, well-ventilated place. Avoid contact with strong oxidizing agents. Ground all metal containers during storage and handling.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.
Product Safety Assessment: ADCOTE™ Solution Polyester Industrial Laminating Adhesives

Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of ADCOTE™ Solution Polyester Industrial Laminating Adhesives. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet available from the Dow Customer Information Group or Contact Us.

Back to top

Additional Information
- Request the relevant Safety Data Sheet or Technical Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/dowcig.htm)

For more business information about ADCOTE™ Solution Polyester Industrial Laminating Adhesives, visit the ADCOTE™ Adhesives web site at www.rohmhaas.com/AdhesivesSealants.

Back to top

References
1. ADCOTE™ 76R44 Adhesive Safety Data Sheet, The Dow Chemical Company
2. ADCOTE™ 102A Adhesive Safety Data Sheet, The Dow Chemical Company
3. ADCOTE™ 2140 [Laminating Adhesive] Safety Data Sheet, The Dow Chemical Company
4. ADCOTE™ 3840D [Laminating Adhesive] Safety Data Sheet, The Dow Chemical Company
5. ADCOTE™ 76R44 Laminating Adhesive Technical Data Sheet, Rohm and Haas Company
6. ADCOTE™ 102A Laminating Adhesive Technical Data Sheet, Rohm and Haas Company
7. ADCOTE™ 2140 Laminating Adhesive Technical Data Sheet, Rohm and Haas Company
8. ADCOTE™ 3840D [Laminating Adhesive] Technical Data Sheet, Rohm and Haas Company
9. ADCOTE™ 76R67 [Laminating Adhesive] Safety Data Sheet, The Dow Chemical Company
10. ADCOTE™ 502S Adhesive Safety Data Sheet, The Dow Chemical Company

Back to top
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 HEREBEY 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.

Back to top