



Product Safety Assessment

ROBOND™ Water-Based Acrylic Pressure Sensitive Adhesives

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Names

- ROBOND™ Tape Adhesives
- Acrylic polymer
- ROBOND™ PS-90
- ROBOND™ Water-Based Acrylic Pressure Sensitive Adhesives
- Emulsion polymer

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Product Overview

- ROBOND™ Tape Adhesives are acrylic water-based pressure sensitive adhesives designed for various pressure-sensitive tape applications¹. For further details, see [Product Description](#) and [Product Uses](#).
- These products are not sold for direct consumer use, but consumers may come in contact with them in adhesive formulations or in cured and dried form in products such as pressure-sensitive tapes or labels. For further details, see [Exposure Potential](#).
- Eye or skin contact can result in slight irritation. Inhalation of vapor or mist can cause headache, nausea, and irritation of the nose, throat, and lungs. For further details, see [Health Information](#).
- ROBOND Tape Adhesives have limited biodegradability, but readily absorb onto soil and biosolids and would be separated during normal wastewater-treatment processes. They would not be expected to bioconcentrate and would be of low concern with respect to aquatic toxicity.² For further details, see [Environmental Information](#).
- ROBOND Tape Adhesives are stable and do not undergo any known hazardous reactions.³ For further details, see [Physical Hazard Information](#).

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Manufacture of Product⁴

- **Capacity** – Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, produces acrylic emulsion polymers in facilities around the world, including North America, South America, Europe, and Asia. The estimated consumption of waterborne acrylic polymers in the U.S. in 2006 was 371 metric kilotonnes (815 million pounds).

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- **Process** – In emulsion polymerization, liquid monomers are added directly to water containing a small amount of surfactant. The monomers are emulsified and polymerize in small droplets in the continuous water medium. Polymerization normally proceeds via free-radical chemistry using a suitable initiator. The properties of the resultant polymer depend on the monomers and additives used and the reaction conditions employed.

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Product Description⁵

ROBOND™ Tape Adhesives are acrylic, water-based products designed for a number of pressure-sensitive tape applications.

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Product Uses^{6,7}

ROBOND™ Pressure Sensitive Tape Adhesives are used in carton sealing tapes and over-laminates.

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Exposure Potential⁸

ROBOND™ Pressure-Sensitive Tape Adhesives are used in the production of industrial and consumer products. Based on the uses for these products, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in an acrylic emulsion manufacturing facility or in manufacturing facilities that use these products. Those working with these products 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 unnecessary exposure. See [Health Information](#).
- **Consumer exposure to products containing ROBOND Tape Adhesives** – Rohm and Haas does not sell these products for direct consumer use, but consumers may come in contact with these products in adhesive formulations or in dried form in products such as pressure-sensitive tapes or labels. See [Health Information](#).
- **Environmental releases** – Small quantities of these products may be released into the environment during processing. In the event of a release, the focus is on containing the spill to prevent contamination of soil and surface or ground water. Small spills should be absorbed with inert materials such as sand or soil. Because they will coagulate and bind to biosolids, these products would be removed by wastewater-treatment facilities. They are of low concern with respect to aquatic toxicity. 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 material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Respiratory protection is recommended for cleaning up spills and leaks because the odor may be unpleasant. Keep spills and cleaning runoff out of municipal sewers and open bodies of water. See [Environmental](#), [Health](#), and [Physical Hazard Information](#).
- **In case of fire** – Deny unnecessary entry into the area. Although these products are not combustible, they can spatter when heated above 100°C (212°F), and the dried residue can burn. Use extinguishing techniques that are suitable for the materials surrounding the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus and protective firefighting clothing when fighting the fire. Follow emergency procedures carefully. See [Environmental](#), [Health](#), and [Physical Hazard Information](#).

For more information, see the relevant [Safety Data Sheet](#).

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Health Information⁹

Eye contact – Direct eye contact with these products can cause slight irritation.

Skin contact – Prolonged or repeated skin contact can cause slight irritation.

Inhalation – Inhalation of vapor or mist from these products can cause headache, nausea, and irritation of the nose, throat, and lungs.

Other – These products may generate small amounts of formaldehyde (CAS No. 50-00-0) during cure. Formaldehyde is classified as a possible human carcinogen.

For more information, see the relevant [Safety Data Sheet](#).

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Environmental Information¹⁰

Because of its high molecular weight and low water solubility, ROBOND™ Tape Adhesives would not be expected to bioconcentrate (accumulate in the food chain). The biodegradation of these products are considered limited. However, these products are likely to absorb onto soil or typical wastewater-treatment biosolids. Thus these products are considered bioeliminable and would be separated from liquid effluents.

To dispose of properly, coagulate the emulsion by the stepwise addition of ferric chloride and lime. Separate the coagulant from the clear liquid and flush the liquid to a chemical sewer. Dispose of the solid material in accordance with local, state, and federal regulations.

Based on comparison with similar materials, ROBOND Tape Adhesives would be of low concern with respect to aquatic toxicity.

For more information, see the relevant [Safety Data Sheet](#).

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Physical Hazard Information¹¹

ROBOND™ Tape Adhesives do not undergo any known hazardous reactions. Although these products are not combustible, they can spatter when heated above 100°C (212°F), and the dried residues can burn. To maintain product quality, avoid extreme temperatures during storage. Keep from freezing. Do not store in direct sunlight. At elevated temperatures, such as a fire, thermal decomposition of these products may yield acrylic monomers.

For more information, see the relevant [Safety Data Sheet](#).

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Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of ROBOND™ Tape Adhesives. 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](#).

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Additional Information

- Safety Data Sheet (www.dow.com/products/product_detail.page?display-mode=msds&product=1120411)
- Contact Us (www.dow.com/assistance/thoughts.htm)
- Linak, Eric, and Kishi, Akihiro, "Marketing Report: Acrylic Surface Coatings," *Chemical Economics Handbook*, SRI Consulting, December 2006 (www.sriconsulting.com/CEH/Public/Reports/592.5500/)
- Product web site: ROBOND™ PS-90 Adhesive (www.dow.com/products/product_detail.page?product-line=1000093&product=1120411)
- *ROBOND PS-90 Technical Data Sheet*, Rohm and Haas Company (www.dow.com/products/product_detail.page?display-mode=tds&product=1120411)

For more business information about ROBOND PS Adhesives, visit the Dow web site at www.dow.com/products/product_line_detail.page?product-line=1000093.

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References

- ¹ *ROBOND™ PS-90 Technical Data Sheet*, Rohm and Haas Company, 2006, page 1.
- ² *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, page 6.
- ³ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, pages 3 and 4.
- ⁴ Linak, Eric and Kishi, Akihiro, "CEH Marketing Research Report: Acrylic Surface Coatings," *Chemical Economics Handbook*, SRI Consulting, pages 10, 33, and 36.
- ⁵ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, page 1.
- ⁶ *ROBOND PS-90 Technical Data Sheet*, Rohm and Haas Company, 2006, page 1.
- ⁷ Linak, Eric and Kishi, Akihiro, "CEH Marketing Report: Acrylic Surface Coatings," *Chemical Economics Handbook*, SRI Consulting, December 2006, page 36.
- ⁸ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, pages 2–3 and 5.
- ⁹ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, pages 1–2.
- ¹⁰ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, pages 5.
- ¹¹ *ROBOND PS-90 Material Safety Data Sheet*, Rohm and Haas Company, August 19, 2008, pages 3 and 4.

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NOTICES:

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