

1. R&D 2. Manufacturing 3. End Use 4. Disposal

4 Ways Greener



3M™ Industrial Adhesives and Tapes

R&D
Manufacturing
End Use
Disposal

4 Ways Greener



From concept to customer...
making "green" sense
for more than 40 years

For more information visit:

- www.3M.com/industrialtapes
- www.3M.com/adhesives
- www.3M.com/sustainability
- www.3M.com/MSDS
- www.3M.com/RoHS
- www.3M.com/regs

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“Greening” the product life cycle

Sustainable manufacturing is high profile news around the world, but for 3M™ Industrial Adhesives and Tapes, it's not news at all. “Green” has been a 3M priority starting with the first ever water-based contact adhesive introduced more than 40 years ago. 3M™ Fastbond™ Contact Adhesive 30NF was an innovation then and today is compliant with the most stringent U.S. air quality requirements.



Building on green history, 3M is expanding and accelerating the “greening” of product life cycles and encouraging participation so that everybody wins whether in the role as producer or consumer, customer or supplier, or simply a good neighbor.

More and more product designers and manufacturing engineers rely on 3M™ Industrial Adhesives and Tapes for design flexibility, more efficient production, and end use performance. At the same time, energy costs and consumer demand for environmentally preferable products are driving sustainable manufacturing. Businesses are increasingly active in exercising their social responsibilities. And many of these businesses prefer suppliers that share similar “green” objectives. Wherever you look, you'll likely find 3M™ Industrial Adhesives and Tapes helping people get more out of life at work, home, and leisure.

Proactive in the “greening” revolution

3M Industrial Adhesives and Tapes Division is part of a large corporation that takes responsibility not only for performance that customers expect, but the environmental impact that comes with large volume manufacturing.

Visit 3M.com/sustainability to learn about strong environmental programs for climate change, water management and waste management. Since 1975, 3M's Pollution Prevention Pays (3P) program has prevented more than 2.7 billion pounds of pollutants and saved nearly \$1.2 billion based on aggregated data from the first year of each 3P project. The 3P program helps prevent pollution at the source - in products and manufacturing processes - rather than removing it after it has been created.

1. R&D for “greener” technology

3M Industrial Adhesives and Tapes Division invests in the following:

- Replacing solvent systems with water-based and 100% solids adhesives
- Building “cradle to grave” product life cycle analysis, including in-depth raw material chemical data. Visit 3M.com/MSDS, 3M.com/RoHS, and 3M.com/regs for product data
- Products to meet current and expected emissions standards
- Expanding REACH compliant product line
- Working with raw materials from renewable resources
- Investigating innovative new biodegradable raw materials for tapes
- Adhesives and tapes for use with low surface energy materials with little or no surface preparation and the associated solvents or abrasive dust

2. Sustainable manufacturing

Since 2000, 3M Industrial Adhesives and Tapes Division has reduced VOC emissions by 78%, waste by 34%, energy use by 50%, and completed 173 3P projects.

Using less energy to produce a product

Re-engineering and optimizing temperature controls in packaging tape production reduced energy/pound of output by 28%.

Reducing VOC emissions

3M Industrial Adhesives and Tapes manufacturing plants in the U.S. have reduced solvent emissions by 25% from its 2006 baseline and are continuing to work on more solvent reduction programs.

Reducing waste

In 2006, 3M Monrovia tape plant was awarded the California Waste Reduction Awards Program (WRAP) sponsored by the California Integrated Waste Management Board - the state's leading authority on recycling and waste reduction.

Enhancing biodiversity at 3M Locations

3M Greenville tape plant received certification from the Wildlife Habitat for exceptional habitat management and environmental education programs at corporate sites.

3. “Greener” end use

Product endorsements and certifications

- Seven GREENGUARD™ certified 3M™ Adhesives
- More than 40 3M™ Adhesives and Tapes that help contribute to LEED EQ credits



Product air emissions

- Hundreds of low or no VOCs 3M™ Adhesives and Tapes
- More than 20 CARB and SCAQMD compliant 3M™ Adhesives during application

Energy, materials, and cost savings

- Full line of repulpable splicing tapes for paper and print industry
- Water-based and 100% solids pressure sensitive adhesive applications requiring less or no heat and ventilation as compared to solvent-based and hot melt adhesive systems
- Use of durable adhesive and tape products in assembly lead to longer service life and ultimately less material consumption
- Specially designed adhesives allow for the use of less expensive substrates such as polypropylene or other hard-to-bond reusable thermoplastics
- Adhesives and tapes for use with low surface energy materials with little or no surface preparation and the associated solvents or abrasive dust

4. “Greener” disposal

- Recyclable packaging after use
- Select newer products available with less packaging material than former products
- 100% of products that meet stringent U.S. air quality regulations and industry chemical requirements for PVC, heavy metals, halogens, and others

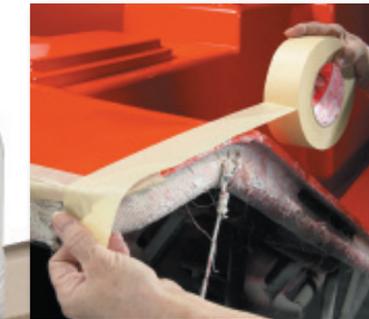
Environmental Advantages of 3M™ Adhesives and Tapes

| 3M Product* | Description | Environmental Advantages |
|--|--|--|
| 3M™ Fastbond™ Adhesives | Selection of fast-setting water-based adhesives for a wide variety of substrates including plastic laminates, foam, insulation, and fabric (30NF, 30H, 49, 100NF, 2000NF, 4224NF) | <ul style="list-style-type: none"> • GREENGUARD Indoor Air Quality Certified® • Non-flammable versions (designated NF)  |
| 3M™ Scotch-Weld™ Hi-Strength Postforming Cylinder Spray Adhesive 94 CA | Postformable spray adhesive in pressurized bulk aerosol cylinder; fast tacking for high pressure laminations, veneers, fiberglass, more; low telegraphing spray pattern for cost-effective application | <ul style="list-style-type: none"> • GREENGUARD Indoor Air Quality Certified® • SCAQMD Rule 1168 Compliant • Low VOCs  |
| 3M™ Industrial Adhesives | Selection of adhesives to bond plastics, rubber, vinyl, and more (847, 1099, 4213NF, 4491) | <ul style="list-style-type: none"> • SCAQMD Rule 1168 Compliant • Low VOCs • HAPS free (4491) • Water-based, non-flammable (4213NF) |
| 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Adhesive Systems | Self-contained, hand-held system combines hot melt adhesive speed with performance typical of structural strength adhesive | <ul style="list-style-type: none"> • 100% solids, solvent-free |
| 3M™ Scotch-Weld™ Hot Melt Systems (Extrudable and Sprayable) | Fast bonding on a wide range of substrates including heat sensitive materials such as styrene foam | <ul style="list-style-type: none"> • 100% solids, solvent-free |
| 3M™ Sealants | A variety of products to seal plastics, metal, glass, and other surfaces; choice of curing speeds | <ul style="list-style-type: none"> • SCAQMD Rule 1168 Compliant • Low VOCs |
| 3M™ VHB™ Tapes | Pressure sensitive adhesive alternative to rivets, screws and welding | <ul style="list-style-type: none"> • 100% solids |
| 3M™ Double Coated Tapes | Versatile with high initial adhesion and good holding power | <ul style="list-style-type: none"> • Solventless adhesive coating process |
| 3M™ Crepe Masking Tapes | Wide choices for holding power, edge sharpness, and clean removal | <ul style="list-style-type: none"> • Solvent-free manufacturing process • Meets EU Directive 94/62/EC for heavy metals • Meets CONEG requirements |
| Scotch® and Tartan™ High Strength Filament Tapes | Filament reinforced tapes for bundling, reinforcing, pallet unitizing, and L" or "C" clip carton closures | <ul style="list-style-type: none"> • Solventless adhesive coating process • Meets EU RoHS Directive 2002/95/EC for heavy metals • Meets CONEG requirements |
| Scotch® Packaging Tapes | A variety of tapes for sealing a wide variety of box sizes, weights, and types; includes stretchable tapes for load containment | <ul style="list-style-type: none"> • Solventless adhesive coating process • Meets EU RoHS Directive 2002/95/EC for heavy metals • Meets CONEG requirements |
| 3M™ Laminating Adhesives | Variety of adhesive transfer tapes, double coated tapes and membrane switch spacers product used attaching, bonding, or assembly | <ul style="list-style-type: none"> • Solventless adhesive coating process |
| 3M™ Aerosol Adhesives | Selection of spray adhesives in portable, self-contained aerosol containers for a wide variety of applications (72,74, 76, 77, 80, 90) | <ul style="list-style-type: none"> • SCAQMD Rule 1168 Compliant • Low VOCs |

* General representation. See “4 Ways Greener Product Bulletin for product listings and environmental advantages
NOTE: The technical information and data on this page should be considered representative or typical only and should not be used for specification purposes.



A water-based coater for Scotch® Box Sealing Tapes was proactively and voluntarily installed in 2003, winning the South Carolina Governor's Award for Pollution Prevention.



For easy unwind from the roll, a release coating is applied to the non-adhesive side of 3M™ Crepe Masking Tape backings. Emissions from this 3M coating process is about 99% water and 1% other substances well below strict reporting requirements.

With the convenience of an aerosol and productivity of bulk, 3M™ Scotch-Weld™ Hi-Strength Postforming Cylinder Spray Adhesive 94 CA bonds laminate to particle board with cost-effective high coverage.

GREENGUARD™ Certified, HAPS free, and fragrance free.

