



3M™ Fastener Adhesive 2353 and 2353Y

Technical Data Sheet



General Description

3M™ Fastener Adhesives 2353 (blue) and 2353Y (yellow) are microencapsulated, room-temperature curing adhesives that enhance the anchorage of threaded fasteners. The adhesives are designed to be coated on the fasteners and dried. They remain dormant until the shearing action of engaging the fastener into a nut or threaded cavity breaks the capsules and allows the adhesive to cure. Typical applications are fasteners for the engine compartment or safety-related parts.

Plastics prone to stress-cracking should not be used in proximity to 3M Fastener Adhesives.

This is a normal temperature adhesive formula that is designed for applications where the service temperature will not exceed 116°C (240°F).

Physical Properties

3M™ Fastener Adhesive		
Bulk Adhesive	2353	2353Y
Color	Blue	Yellow
Solvent Base	Toluene	Toluene

Bulk Adhesive Storage and Handling

Container Sizes	18.9 liter (5 gallon) pails
Shelf life	Fifteen months from date of manufacture. Rotate inventory on first-in, first-out basis.
Storage conditions	Store pails at 4° - 38°C (40° - 100°F) Store in a facility rated for storage of flammable liquids. Check local codes. PROTECT FROM FREEZING. Storage below 12°C (32°F) for extended periods will cause precipitation of an ingredient which floats on top of the solvent. Stirring at room temperature will re-dissolve the precipitated ingredient.
Mix before use	Adhesive solids settle to bottom of pail. Mix prior to use. Use stirrer, pail-shaker or pail-tumbler rated for flammables.



Coated Fastener Storage and Handling

Shelf life	One year from date of adhesive application. Shelf life can be as long as four years, depending on the storage conditions. Fasteners which are more than one year from the date of adhesive application should be checked for performance prior to use.
Storage conditions	Store coated fasteners at 4°-38°C (40°- 100°F). Rotate inventory on first-in, first-out basis. PROTECT FROM HUMIDITY; exposure to condensation or high humidity affects the adhesive. This rapidly impacts shelf life, prevailing in torque and out torque. Use plastic bags and absorbent to protect coated fasteners from humidity. Adhesive will whiten in color as exposure to humidity is extended. Whitening and adhesive affects can be reversed by heating fasteners to 150°C for 15 – 20 minutes.

Performance Properties

These properties are representative of the products' performance, and are supported by laboratory test data. However, the values reported are not intended to be used for specification purposes. All testing, unless otherwise stated, was performed on 3/8" x 16" plain steel bolts with matching plain steel nuts.

Prevailing In Torque (PIT)	2353/2353Y
Initial ¹	1 ft-lb (1.4 Nm)
Break-Loose Torque (BLT)	
Initial ¹	41 ft-lbs (55.8 Nm)
Break-Away Torque (BAT)	
Initial ¹	14 ft-lbs (19.0 Nm)
Heat aging ²	No change (±10% of initial value)
Cycles ³	No change (±10% of initial value)
Water immersion ⁴	No change (±10% of initial value)
Gasoline immersion ⁵	No change (±10% of initial value)
Hot motor oil immersion ⁶	No change (±10% of initial value)
Transmission fluid immersion ⁷	No change (±10% of initial value)
Anti-freeze immersion ⁸	No change (±10% of initial value)
Prevailing Out Torque (POT)	
Initial ¹	11 ft-lbs (15.0 Nm)

¹ 24 hours at room temperature

² 3 weeks at 104°C (220°F)

³ Conditioned under 3 of the following cycles: 1 1/2 hours at -56°C (-68°F), 1 hour at 177°C (350°F), and 1 1/2 hours at 24°C (75°F)

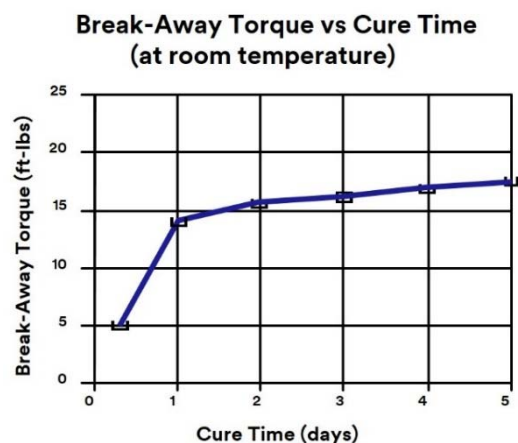
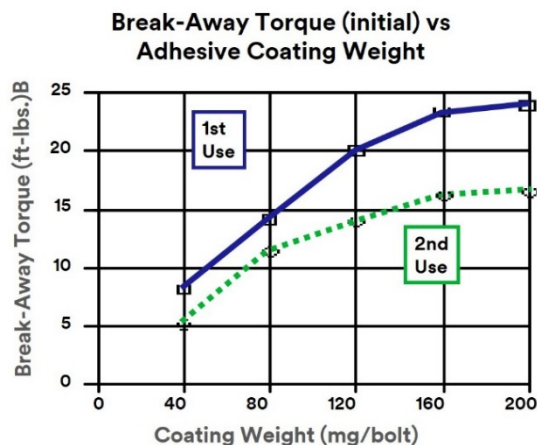
⁴ Immersion in distilled water for 1 week at 24°C (75°F)

⁵ Immersion in regular, unleaded gasoline for 1 week at 24°C (75°F)

⁶ Immersion in SAE 30 motor oil for 1 week at 24°C (75°F)

⁷ Immersion in transmission fluid for 1 week at 24°C (75°F)

⁸ Immersion in a 50% solution of ethylene glycol in water for 1 week at 49°C (120°F)



Features, Advantages, and Benefits

Product Features	Performance Advantages	Customer Benefits
Epoxy chemistry	<ul style="list-style-type: none">• High torque values on coated fasteners Environmental resistance (to heat, automotive fluids, vibration, thermal and mechanical shock)	Robust, structural bonding performance
Two-part (microencapsulated)	<ul style="list-style-type: none">• Extended shelf life (bulk adhesive and coated fasteners)• Controlled reactivity (adhesive activates and cures upon insertion)• Reusability (additional capsules break with each re-insertion)*	Convenient handling by the end-users
Flow coatable formula	<ul style="list-style-type: none">• Allows controlled application to fasteners; viscosity can be adjusted to achieve target coating weights• Penetrates oil coatings• Fast drying• Bonds to a broad range of fastener finishes	Broad handling, dispensing and drying windows for the applicators

* Reuse performance varies by application. The establishment of number of uses requires application testing.

Contact Information

The information provided in this technical document is intended as a guide for this product. For more information or help in selecting a 3M product for an application, please contact your 3M technical service representative or call 1-800-328-1684.

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