Advances in Cyanoacrylate Technology

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Assembly Tech Expo

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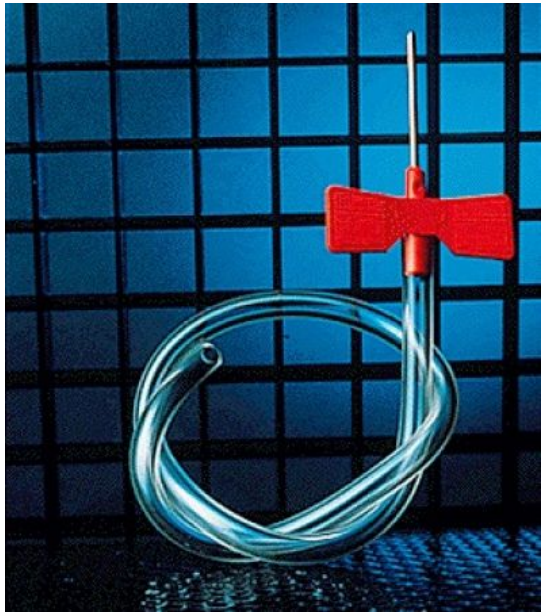
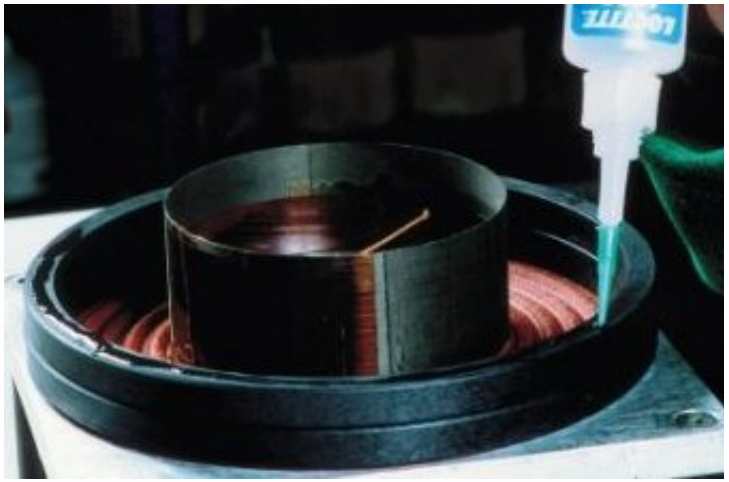
Agenda

- Introduction
- Cure mechanism
- Benefits and Considerations
- High Performance Properties
- New Developments
- Equipment
- Question and Answer

Cyanoacrylates: Introduction





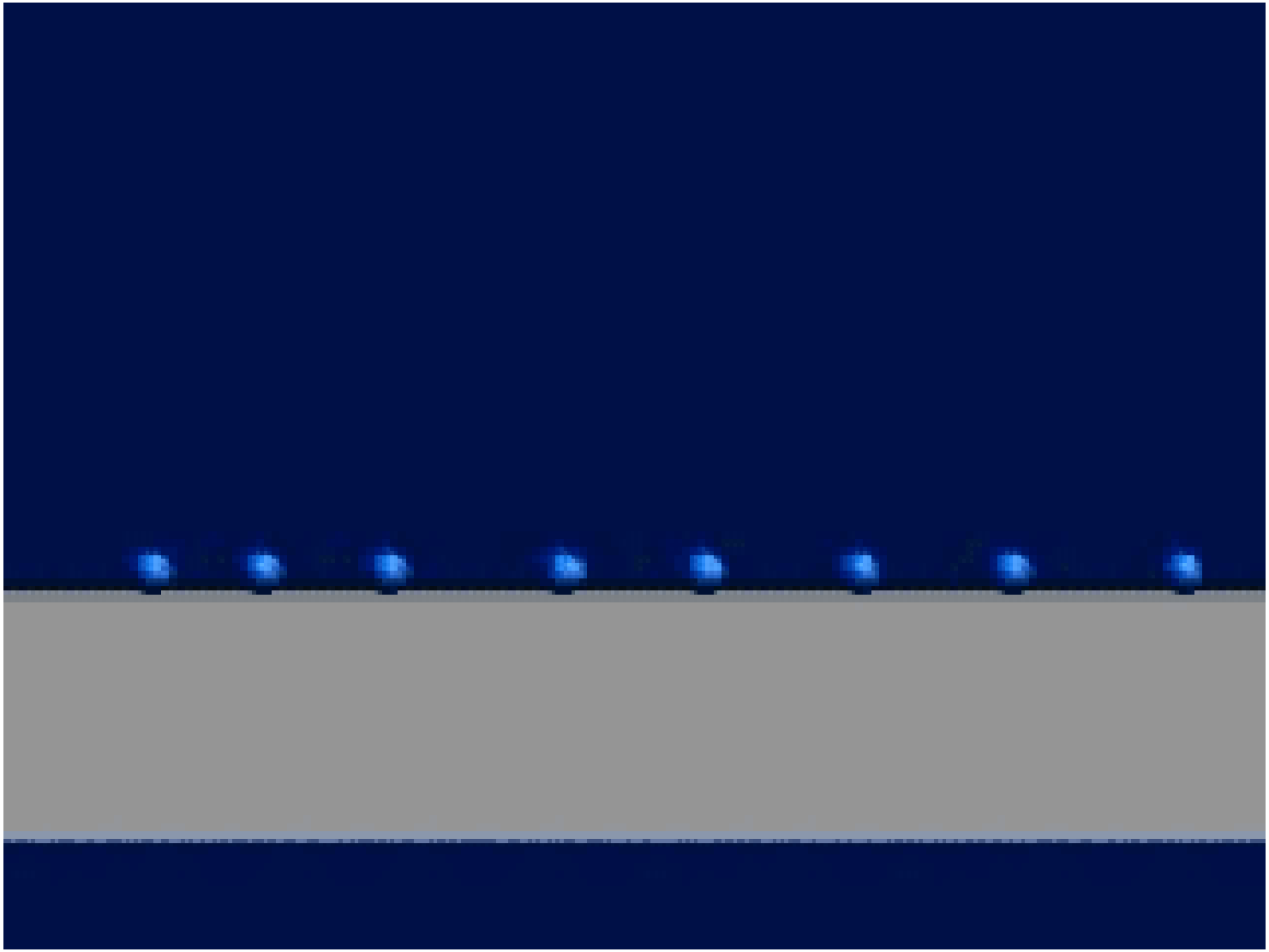
Tube to Fistula Needles

Spider to Basket Speakers

Faceplate to Shell Hearing Aids

Cyanoacrylates are the fastest curing room temperature adhesives that provide excellent adhesion to plastics, elastomers, and metals. Nothing is simpler to use, faster, or stronger !

Cure Mechanism



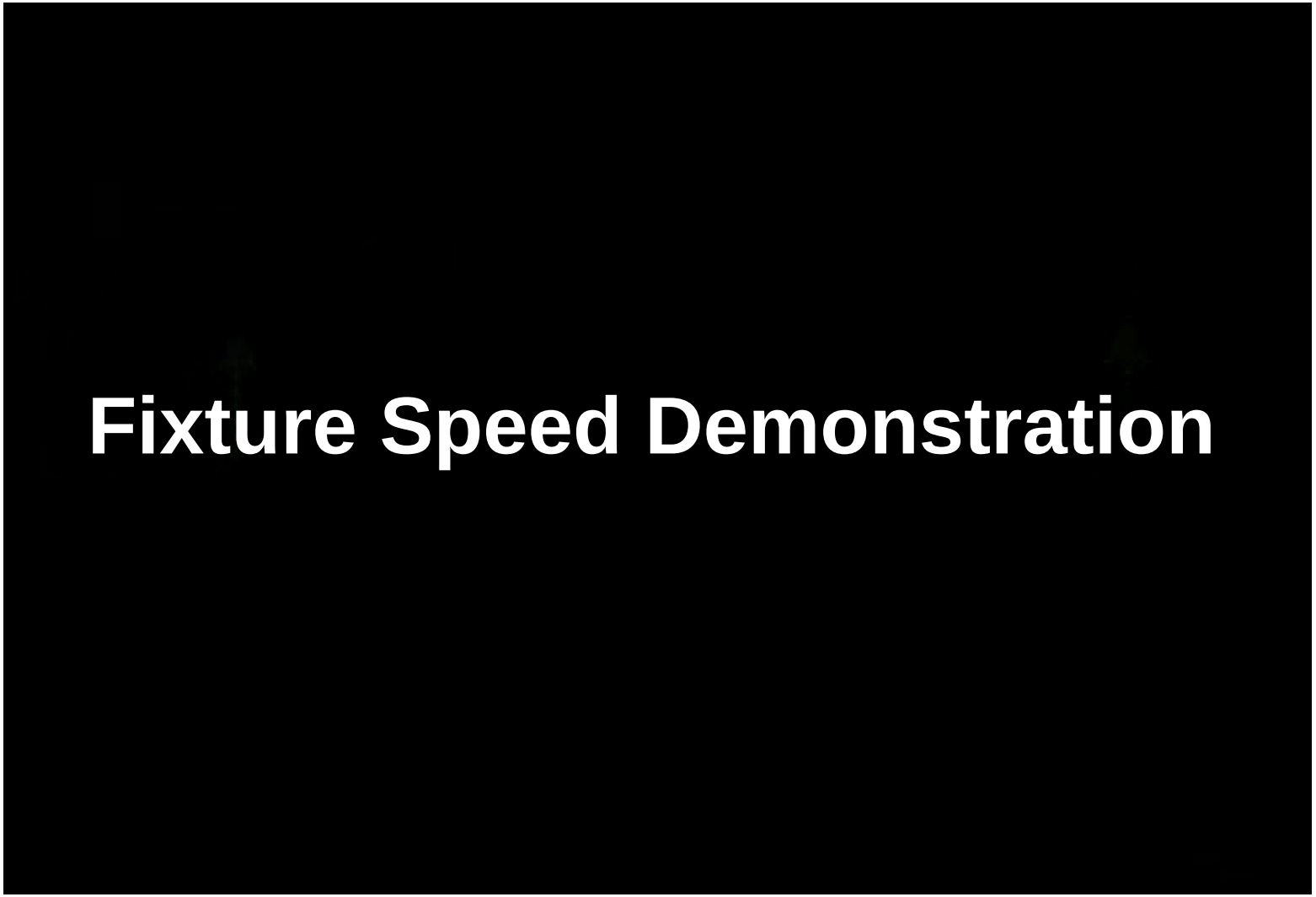
Key Benefits
Standard Cyanoacrylates

- **Simple processing**
  - **One part**
  - **Room temperature cure**
- **Fast fixturing**
- **High adhesion to plastics and elastomers**
- **Wide range of formulations; viscosities**
- **Accelerators and primers**

Considerations
Standard Cyanoacrylates

- Limited gap cure
- Bonds skin rapidly
- Poor durability on glass
- Thermoplastic
  - Solvent Resistance
  - Temperature Resistance

Fast Cure Speed



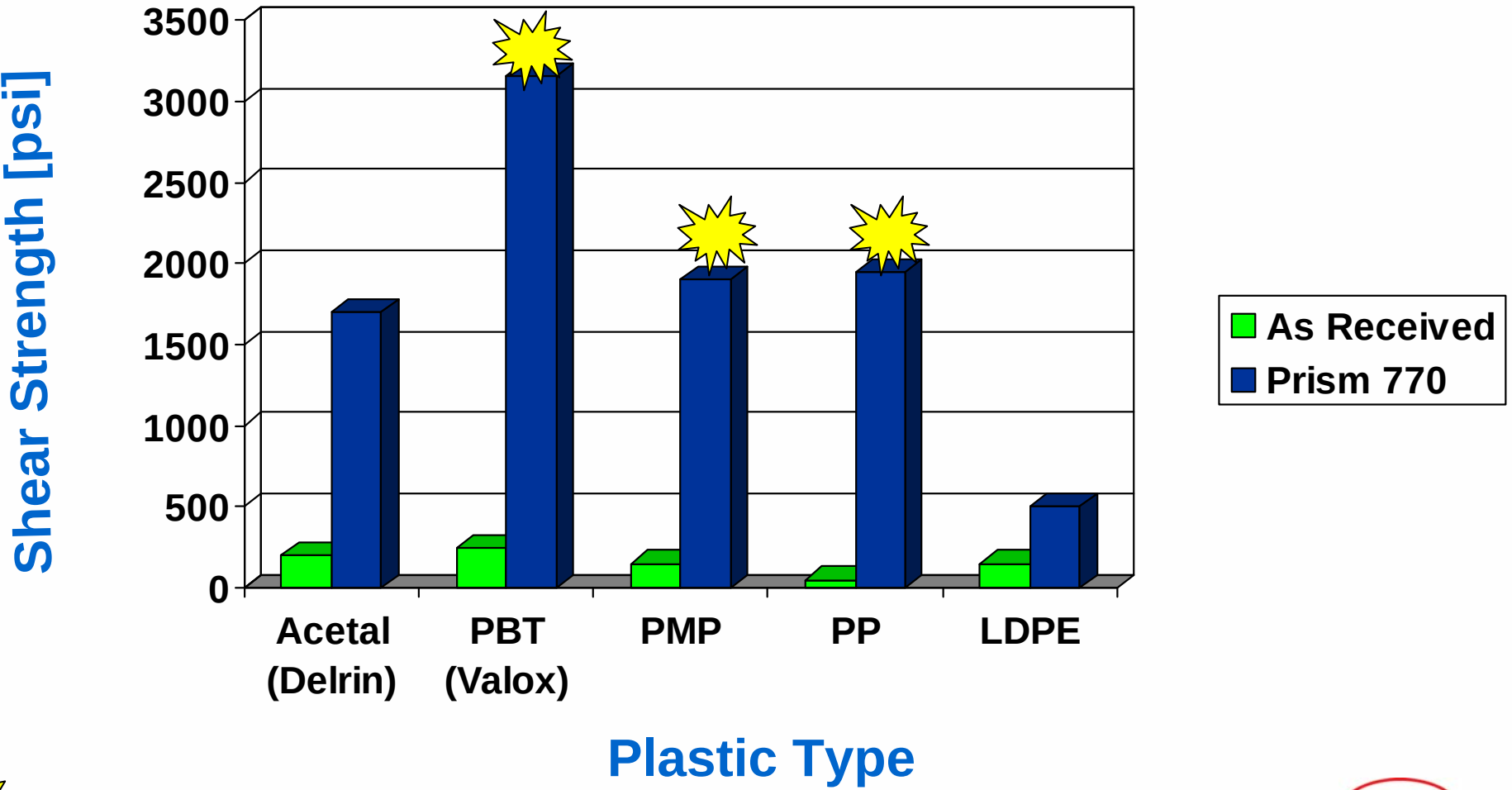
Adhesion to Plastics

Shear Strength		
>1,000 [psi]	>3,000 [psi]	Substrate Failure
CAP	Epoxy	Acrylic
PEI	Nylon	ASA
PES	Polycarbonate	ABS
PS		DAP
Vinyl Ester		Ionomer
PPO		Polyester
		PET
		PI
		PVC
		SAN

Adhesion to Elastomers

Rubber Boot to Jaguar Chassis

Prism Primers



= substrate failure

Accelerators

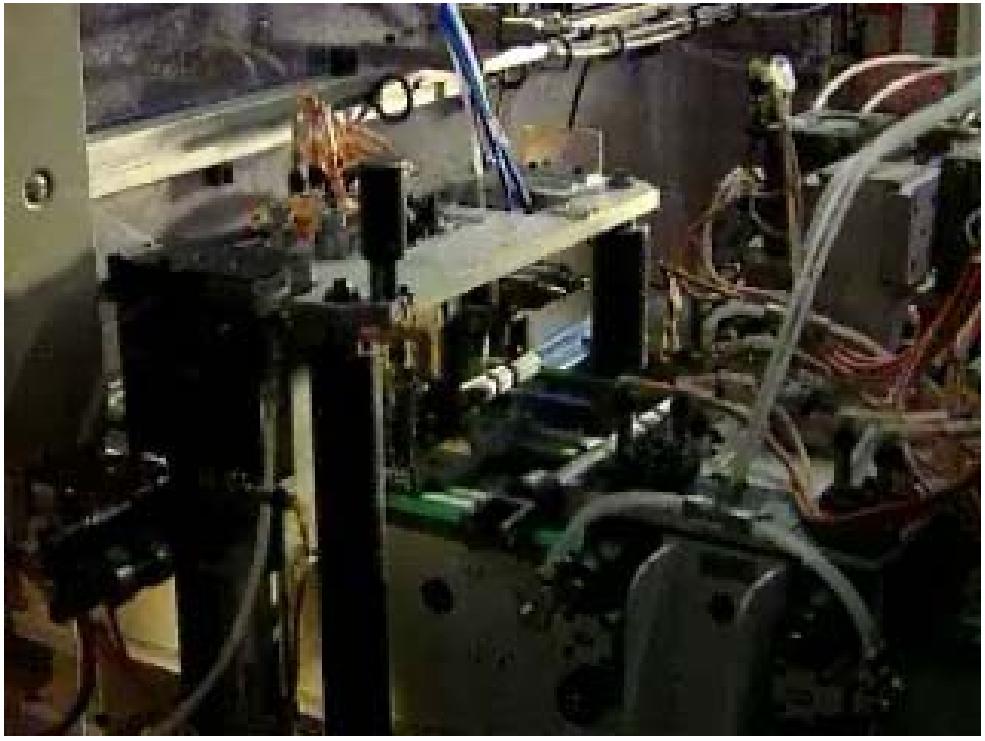
- Speeds Cure
- Reduces Blooming
- Application Method
  - ➢ Pre-Applied
  - ➢ Post- Applied

High Performance Properties

- High Temperature
- Light Cure
- Toughened
- Flexible
- Low Odor / Low Blooming

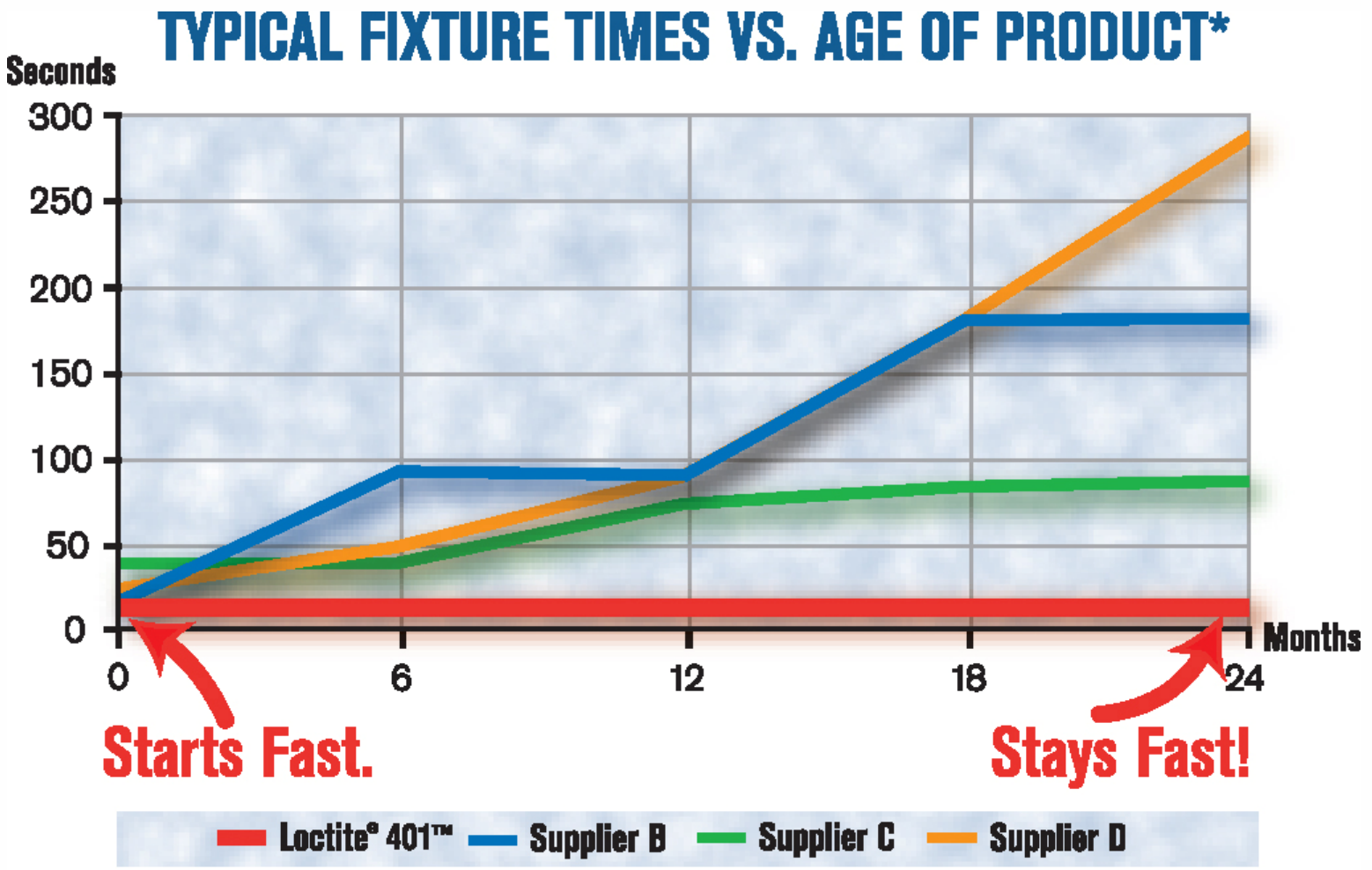
Surface Insensitive

Wood Handle to Brass
Assorted Collectibles
GEM Products



Plastic Ring
Steering Wheel Adjustment
Volkswagen

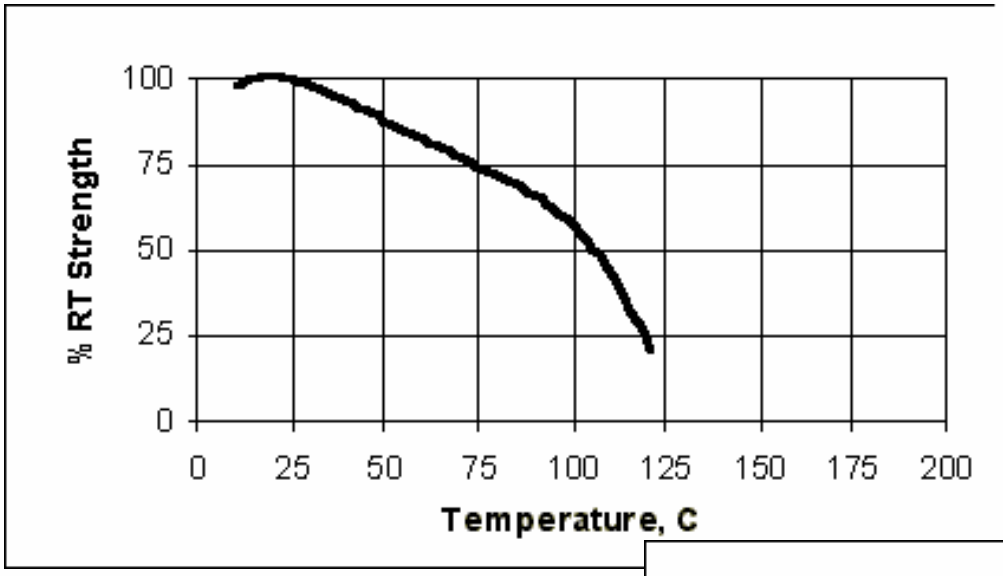
Surface Insensitive



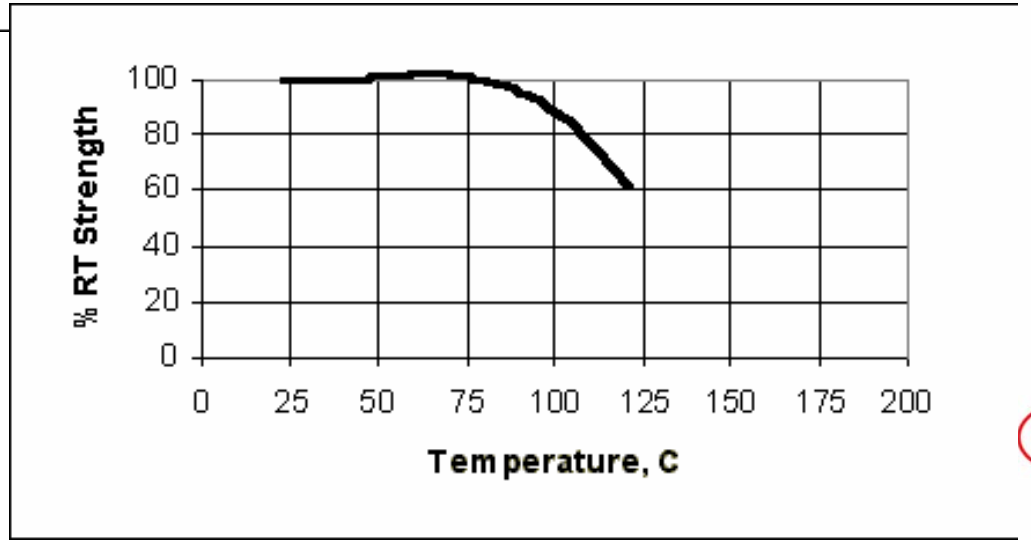
*Based on accelerated aging studies at 50˚C. Fixture speeds tested on steel specimens.

Thermally Resistant

Standard CA

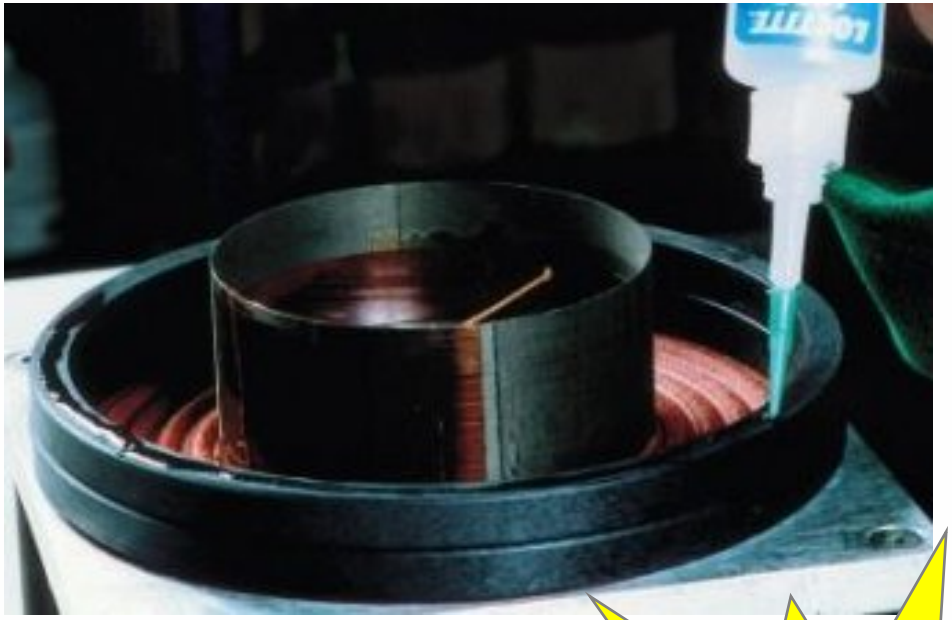


Proprietary Thermally Resistant



Light Cure

Toughened Cyanoacrylates



Spider to Basket Speakers

Tacking O-ring in Groove

Now clear with Surface Insensitive properties

Toughened Cyanoacrylates

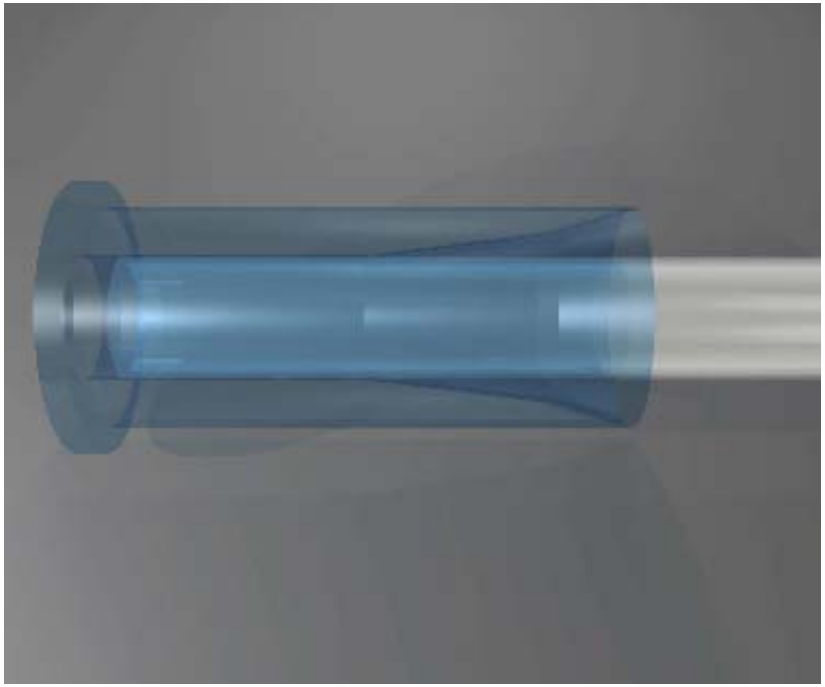
LOCTITE®

Impact Strength Comparison

Toughened vs. Non-Toughened Surface Insensitive Cyanoacrylates

Henkel

Flexible Cyanoacrylates

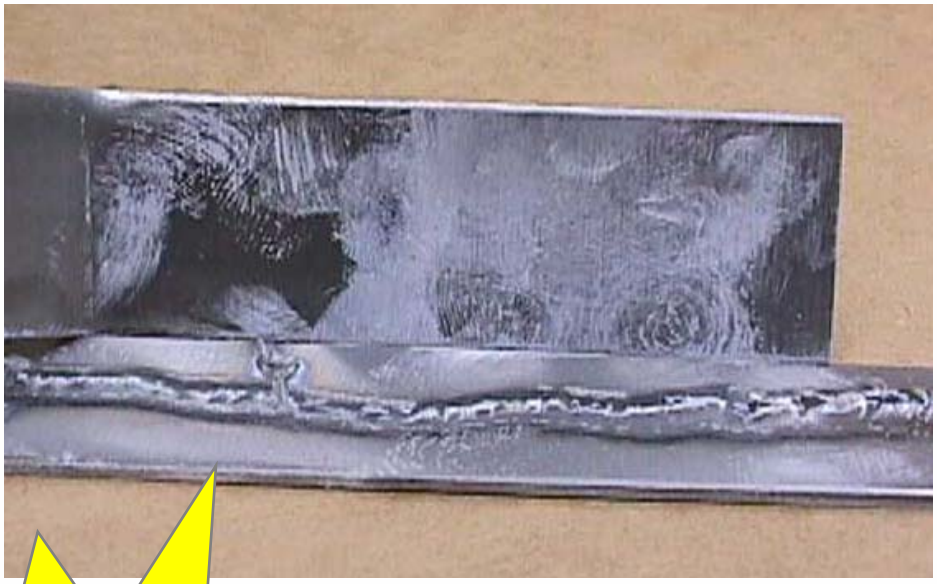


PVC Tubing
Medical Tube Set

EPDM Seal to Anodized Aluminum Frame
Window Seal

Low Odor / Low Blooming

Ski goggles



Blooming

Lipstick tubes

Now Available with Surface Insensitive Properties for faster curing

Equipment

Manual

Semi-Automated

Robotic
Work cell

Cyanoacrylates

LOCTITE®

Questions?

Henkel