

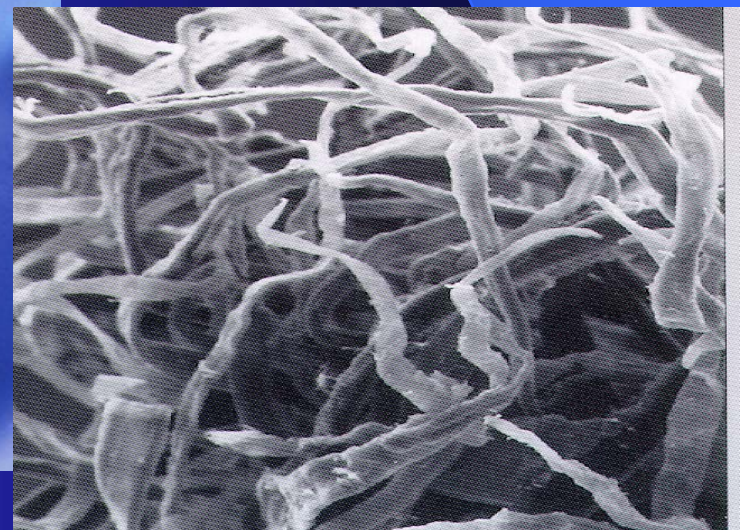
# Adhesive & Sealants

## ENGINEERED CELLULOSE FIBERS

*Lightweight, High Bulk Reinforcing Fiber for the Chemical Processing Industries.*

**interfibe™**

## Engineered Cellulose Fibers





**Properly formulated Interfibe  
cellulose fibers are one of the  
most cost effective and unique  
fillers available to the Adhesive  
and Sealant industry**

# The Challenge

*Typical Formulating PROBLEMS in the adhesive and sealant industry*

- **High PVC**
- **Mud Cracking**
- **Oil Exudation/Plasticizer Retention**
- **High Weight per Gallon**
- **Profile and Sag Retention**
- **High Resin demand from Conventional Fillers**

# The Solution

***interfilbe***™

**Engineered Cellulose Fibers**

# Testing

Interfibe Cellulose Fibers were Evaluated to provide these enhancements for a typical Sealant Formulation



Fiber Benefits

- **Lightweight**
- **Easy Dispersion**
- **Low Resin Demand**
- **Little Effect on Color**
- **Excellent Tensile Properties**
- **Anti Sag Properties**
- **Unique Products**

# Testing

The following ASTM test were performed

- **ASTM D 2453**
  - This test method describes a laboratory procedure for determining the shrinkage of oil- and resin-base caulking compounds, as well as the evaluation of the tenacity property of such compounds.
- **ASTM D 2452**
  - This test method describes the laboratory procedure for determining the rate of extrusion of oil- and resin-base caulking compounds.
- **ASTM D 722**
  - This test method describes the laboratory procedure for determining the rate of extrusion of oil- and resin-base caulking compounds.
- **ASTM D 412**
  - These test methods describe procedures used to evaluate the tensile (tension) properties of vulcanized rubbers and thermoplastic rubbers and thermoplastic elastomers.

# Sealants Tested

**ADCO Sealant AD-33**

**ADCO Sealant AD-50**

**ADCO Sealant AD-60**

**These typical sealant formulations were tested at the following levels\*:**

**100 % (Control)**

**99.5% Sealant + 0.5% Interfibe Gel Cel 10**

**99% Sealant + 1% Interfibe Gel Cel 10**

**98.5% Sealant + 1.5% Interfibe Gel Cel 10**

**\*percent's by total weight**

# Testing Results

<b>Sealant AD-33 (Low Viscosity)</b>	100	99.5	99	98.5
<b>Gel Cel 10 Content, % by Wt</b>	0.0	0.5	1.0	1.5
Press Flow Viscosity (ASTM D2524)	5.11	7.28	7.63	7.44
Tensile Strength (ASTM D412), psi	17.90	26.30	27.60	28.70
Elongation (ASTM D412), %	387.00	473.00	436.00	400.00
Color (Hunter), Dark/ Lighter vs. Control	Control	-13.05	-22.99	-31.76
Shrinkage (ASTM D2453), psi	65.10	39.60	47.70	42.60
Oil Migration (ASTM D722, 100 C)	1.40	2.41	1.53	0.00
<b>Sealant AD-50 (Low Viscosity)</b>	100	99.5	99	98.5
<b>Gel Cel 10 Content, % by Wt</b>	0.0	0.5	1.0	1.5
Press Flow Viscosity (ASTM D2524)	90.00	179.50	126.30	177.30
Tensile Strength (ASTM D412), psi	19.80	20.40	19.10	22.70
Elongation (ASTM D412), %	449.00	460.00	369.00	385.00
Color (Hunter), Dark/ Lighter vs. Control	Control	-22.82	-29.65	-33.75
Shrinkage (ASTM D2453), psi	65.10	39.60	47.70	42.60
Oil Migration (ASTM D722, 100 C)	2.20	2.41	1.53	0.00
<b>Sealant AD-60 (Low Viscosity)</b>	100	99.5	99	98.5
<b>Gel Cel 10 Content, % by Wt</b>	0.0	0.5	1.0	1.5
Press Flow Viscosity (ASTM D2524)	60.30	83.60	87.10	115.10
Tensile Strength (ASTM D412), psi	11.30	11.30	11.20	11.20
Elongation (ASTM D412), %	595.00	569.00	422.00	359.00
Color (Hunter), Dark/ Lighter vs. Control	Control	-16.54	-25.09	-30.99
Shrinkage (ASTM D2453), psi	20.80	15.80	10.90	13.80
Oil Migration (ASTM D722, 100 C)	2.60	2.84	0.00	0.00

# Testing Conclusions

- **Oil Migration was the major improvement found during the test run**
- **Dramatic improvements were found with small additions of Gel-Cel 10 in ALL compounds**
- **Total reduction was realized in ALL compounds at a 1.5% loading level**

# Testing Conclusions

- **Shrinkage was reduced dramatically**
- **The addition of cellulose fibers reduced the compound shrinkage at a much higher rate than the solids level increase**
- **This was the second most noticeable effect next to the reduction in exudation**

# Testing Conclusions

- **Additions of low levels of cellulose fibers did not negatively affect the extrudability of the compounds**
- **Tensile strength and elongation of the cured compounds were not dramatically effected.**

# Oil Bleed Test Result



## Oil Bleed Tests

ASTM D-722 @ 100c

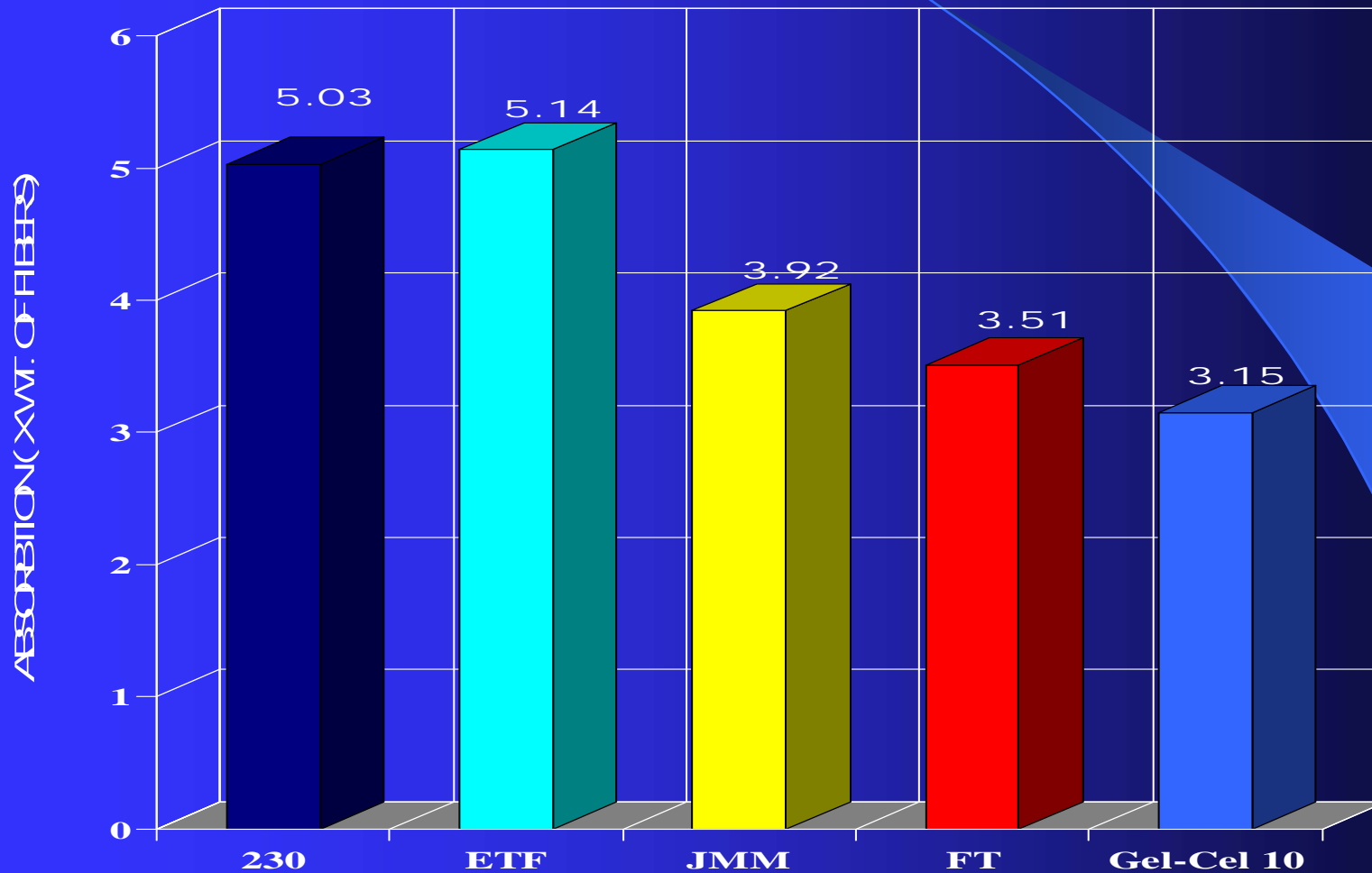
A. Control

B. 0.5% Cellulose

C. 1.0% Cellulose

D. 1.5% Cellulose

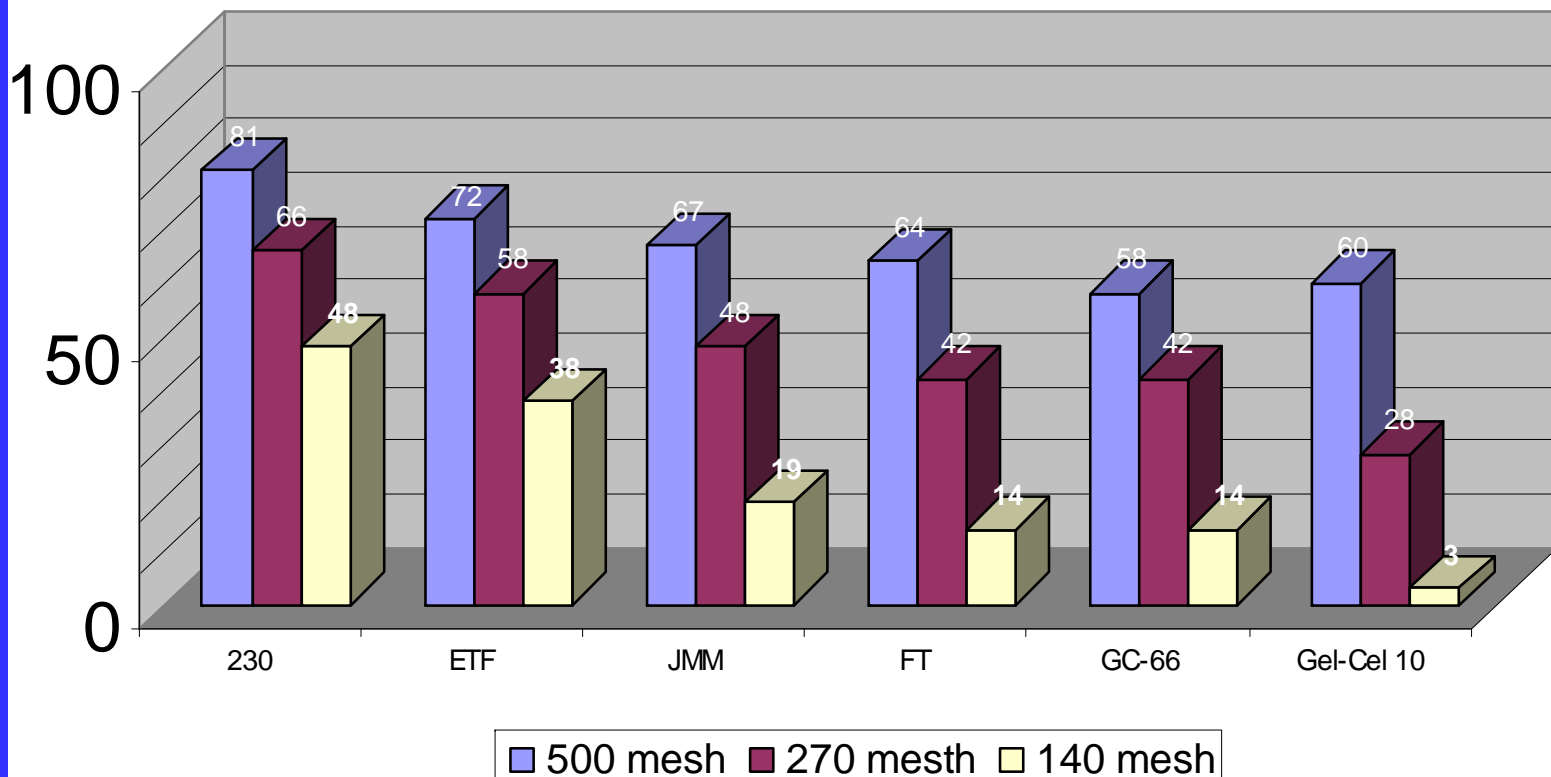
# Oil Absorption by Grade



Interfibe Corporation 800-262-3771

# Fiber Lengths for Every Application

## Alpine Sieve Measurements



# Fiber's for Sealants

- **With a LOW 3% average MOISTURE content, INTERFIBE can be used in most any Sealant or Adhesive formula**
- **INTERFIBE Cellulose Fibers are available in Grey or White**

# Fiber's for Sealants

- **INTERFIBE** needs no special equipment
- **INTERFIBE** requires no additional dispersant unless added directly into water
- When added directly into water or emulsions, and only low shear is available, **INTERFIBE FTP** is available with a surfactant treatment.

# Commitment to the Adhesive and Sealant Industry

- **Interfibe has been providing the Adhesive and Sealant industry with innovative products and technical support since 1987**
- **Interfibe is committed to providing the industry with products that conform to the highest quality standards**
- **Interfibe is committed to providing a stable source of cellulose fiber with 100% ON-TIME/ON-SPEC material**

# Commitment to the Adhesive and Sealant Industry

- **Interfibe is approved for use in over 50 ASC member manufacturing plants worldwide**
- **Interfibe maintains relationships with independent formulators in the industry**
- **Interfibe has established relationships with independent testing facilities in the industry**
- **Interfibe provides formulations and testing services for customers**

# Commitment to Quality

- **Interfibe Corp manufactures the highest quality post-consumer cellulose available anywhere in the world.**
- **Our proprietary *JET PROCESS* technology allows us to provide you with a tightly controlled material, with consistent fiber length, moisture level, and process properties.**

# Commitment to Quality

***INTERFIBE Corp.*** is a self-certified vendor with many of our QS-9000 customers, providing material that is **100% ON-TIME / ON-SPEC.**

# ***Interfibe Corp.***

For more information call

**Toll Free: 1-800-262-3771**

**PH: 1-440-248-2266**

or visit us at

**WWW.INTERFIBE.COM**