

A FORMULARY OF ADHESIVES AND OTHER SEALANTS

Compiled by

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*Chemical Publishing Co., Inc.
New York, N.Y.*

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Chemical Publishing Co., Inc.

ISBN 0-8206-0297-3

ISBN 0-8206-0366-X (pbk)

Printed in the United States of America

PREFACE

Through the cooperation and contribution of major adhesive raw material manufacturers, we are pleased to present a formulary devoted entirely to a variety of adhesives and sealants. The purpose of this compilation is not to educate the reader as to the physical and chemical nature of adhesive ingredients but to make available a catalog of formulas reflecting the current technology in the adhesives industry.

The formulas herein should be considered starting-point preparations and thereby used as the basis for further experimentation in the development of new adhesive products.

The book is organized so that each chapter deals with major adhesive applications. Within each chapter the formulas are further subdivided according to their specific use and chemical composition.

Unless otherwise specified, all formulas have the quantities of ingredients given in parts by weight. A list of abbreviations that are used throughout the formulary is included. All constituents appearing by their tradename are printed in boldface type, and the manufacturers' names and addresses appear after the list of alphabetized tradenames in the appendix.

ABBREVIATIONS

| | |
|--------|---|
| @ |at |
| approx |approximately |
| aq |aqueous |
| ASTM |American Society for Testing and Materials |
| Bé |Baume |
| b.p |boiling point |
| C |degrees Centigrade |
| ca |circa |
| cc |cubic centimeter |
| cm |centimeter |
| conc |concentrated |
| cP |centipoise(s) |
| cps |centipoise(s) |
| cs |centistoke(s) |
| F |degrees Fahrenheit |
| fl oz |fluid ounce |
| ft |foot |
| g |gram |
| gal |gallon |
| h |hour |
| ht |height |
| in |inch |
| l |liter |
| m |meter |
| M |mole |
| max |maximum |
| med |medium |
| min |minute |
| min |minimum |
| ml |milliliter |
| mm |millimeter |
| m.p |melting point |
| m.w |molecular weight |
| N |newton |
| neut |neutralized |
| NF |National Formulary |

| | |
|------------|-----------------------------|
| no..... | number |
| NV..... | nonvolatile |
| O/W..... | oil-in-water |
| oz..... | ounce |
| Pa..... | pascal |
| pbw..... | parts by weight |
| pH..... | hydrogen-ion concentration |
| phr..... | parts per hundred resin |
| ppm..... | parts per million |
| psi..... | pounds per square inch |
| PVC..... | polyvinyl chloride |
| q.s..... | quantity sufficient to make |
| qt..... | quart |
| rh..... | relative humidity |
| rpm..... | revolutions per minute |
| RT..... | room temperature |
| s..... | second |
| sol'n..... | solution |
| Tw..... | Twaddell |
| USP..... | United States Pharmacopeia |
| visc..... | viscosity |
| W/O..... | water-in-oil |
| wt..... | weight |
| XXX..... | triple pressed |
| μ..... | microns |
| ≈..... | approximately |
| #..... | number |
| %..... | percent |
| >..... | greater than |
| ≥..... | greater than or equal to |
| <..... | less than |
| ≤..... | less than or equal to |

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Chapter I

ADHESIVES FOR PAPER

Pressure-Sensitive Labels

Formula No. 1

(Rubber/Resin)

| | |
|-----------------------|-----|
| Kraton® | 100 |
| Wingtack® 95 | 140 |
| Shellflex® 371 | 40 |
| Irganox® 1010 | 2 |

No. 2

(Permanent, Rubber/Resin)

| | |
|--------------------------------|-------|
| SBR-1011 | 100.0 |
| Super Sta-Tac® 0-80 | 150.0 |
| Nonstaining Antioxidant | 1.5 |
| Toluene | 200.0 |
| Hexane | 200.0 |

Properties:

| | |
|---------------------------|---------------|
| Solids Content | 38 ± 1% |
| Visc. (Brookfield) | 1800–2200 cps |

No. 3

(Polyvinyl Isobutyl Ether)

| | |
|-------------------------------|---------|
| Lutonal IC 125 | 30.0 |
| Lutonal I 60 | 40.0 |
| Lutonal I 30 | 10.0 |
| Vulcanox® ZKF | 0.5 |
| Mineral Spirit (b.p. 65–95 C) | ≈ 150.0 |

No. 4

(Vinyl-Isobutyl Ether)

| | |
|-------------------------------|---------|
| Lutonal IC 30 | 30.0 |
| Lutonal I 60 | 60.0 |
| Lutonal IC 125 | 30.0 |
| Vulcanox® ZKF | 1.0 |
| Mineral Spirit (b.p. 65–95 C) | ≈ 120.0 |

No. 5

(Water-Soluble, Vinyl Ether/Resin)

| | |
|-------------------------------------|----|
| Acronal 880 D | 50 |
| Acronal 500 D | 30 |
| Lutonal M 40 (≈50% in water) | 20 |
| Lutensol AP 6 | 1 |
| Toluene | 5 |

No. 6

(Peelable, Acrylic Resin)

| | |
|---------------------|----|
| Acronal 4 D | 90 |
| Acronal 80 D | 10 |

No. 7

(Peelable, Acrylic Resin)

| | |
|---|----|
| Acronal 4 L (\approx 25% in acetone/mineral spirit) | 90 |
| Acronal 4 L (\approx 50% in ethyl acetate) | 10 |

No. 8

(Peelable, Acrylic Resin)

| | |
|---|----|
| Acronal 4 L (\approx 25% in acetone/mineral spirit) | 90 |
| Staybelite® Ester 10 (30% sol'n. in toluene) | 10 |

No. 9

(Peelable, Acrylic Resin)

| | |
|----------------------|-------|
| Acronal 103 L | 100.0 |
| Basonat A 270 | 0.5 |

No. 10

(Removable, Acrylic Resin)

| | |
|----------------------|-----|
| Acronal 4 D | 100 |
| Palatinol® AH | 20 |

No. 11

(Water Removable, Acrylic Resin)

| | |
|------------------------------------|----|
| Acronal 500 D | 30 |
| Acronal 880 D | 50 |
| Lutonal M 40 (50% in water) | 20 |
| Lutensol® AP 6 | 1 |

Note:

This adhesive loses its adhesion on short contact with water. It is re-emulsified, but not dissolved.

| | | | |
|----------------------------------|-----|----------------------------|-----|
| Tychem® | 122 | Vinsol® | 78 |
| Tylac® | 122 | Vistanex | 56 |
| Tylose MHB | 10 | Volclay 200 | 8 |
| Ucar® | 147 | Vulcabond | 155 |
| Ultraflex® | 78 | Vulcafor | 155 |
| Ultrathene | 151 | Vulcanox® | 95 |
| Unicel | 50 | Vulcarite | 26 |
| Union Carbide A-112 | 147 | Vulkanox | 90 |
| Unithane | 143 | Vynathene | 151 |
| Vanox | 152 | Weston™ | 28 |
| Varcum® | 122 | Whitetex Clay | 58 |
| Varsol No. 1 | 56 | Wingstay | 70 |
| Versalon | 60 | Wingtack® | 70 |
| Vinnapas | 156 | Zonarez | 17 |
| Vinol® | 3 | Zonester® | 17 |

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