

# **Handbook of PLASTIC AND RUBBER ADDITIVES**

**Second Edition  
Volume 1-2**

**Compiled by  
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**Synapse Information Resources**

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## Preface

The Handbook of Plastic and Rubber Additives, Second Edition has been completely revised and describes approximately 20,000 trade name products and generic chemicals that act as functional additive ingredients in the formulation of plastic and rubber products. The extensive information about these chemicals and materials has been gathered from more than 3700 worldwide manufacturers, their subsidiaries, and distributors.

Plastic additives are a diverse group of specialty chemicals that are either incorporated into the plastic product prior to or during processing, or applied to the surface of the product when processing has been completed. These additives aid in the manufacture of the plastic end product (e.g., blowing agents, mold release agents, lubricants, organic peroxides) or improve the characteristics of the final product (antimicrobials, flame retardants, odorants, pigments, reinforcing agents, anti-stats, impact modifiers, and heat/light stabilizers).

Natural rubbers and synthetic elastomers derive their commercial versatility from the incorporation of additives classified into three categories: antidegradants (including antiozonants and antioxidants), accelerators and vulcanizing agents, and specialty additives (e.g., blowing agents, plasticizers, flame retardants, softeners).

Choosing optimal ingredients in the overall process of developing new and innovative plastic and rubber products involves both function and economic considerations. Additives remain an expensive component of the formulated product. Additive manufacturers are faced with the imperative to develop products that not only enhance the overall processability and functionality of the plastic and rubber end products, but to satisfy environmental and health demands as well. The challenge to the plastics and rubber industries is to innovate and improve functionality while adhering to more requirements and constraints.

This reference coalesces current and essential information about both trade name and chemical additives into a single source and expedites additive selection for the user by cross-referencing trade name products by chemical composition, function, CAS number and EINECS number.

The book is divided into four parts and includes an Appendix:

**Part I-- Trade Name Reference** provides an alphabetical listing of approximately 16,000 trade name chemical and material additives that are used in formulating plastic and rubber products. Each entry includes the manufacturer's name; chemical/

material description; its detailed functions and applications in all aspects of industry; physical properties, such as form, molecular weight, density, solubility, boiling point, cloud point, flash point, pH, freezing point, activity; toxicology, storage, precautions, etc.

**Part II-- Chemical Component Cross-Reference** covers more than 4000 chemicals and materials that are contained in the trade name products profiled in Part I or generic chemicals that are not linked to trade names but are used in the formulation of plastics and rubber. Each entry contains information including the following: CAS (Chemical Abstract Service), EINECS/ELINCS (European Inventory of Existing Commercial Chemical Substances/European List of Notified Chemical Substances), and UN/DOT reference numbers, classification, definition, chemical synonyms, empirical and molecular formulas, properties, toxicology, precautions, storage, uses, use level, regulatory details, manufacturers and distributors. All chemical/material synonyms are cross-referenced back to the main entry. Entries, in this section, include a listing of the trade name products that are either equivalent to this chemical or contain it as one of its ingredients.

**Part III-- Functional/Application Index** is a powerful tool for locating the trade names and chemicals based on their function and/or industrial application area. By searching for key functional words such as antiblocking agent, activator, blowing agent, flexibilizer, etc., combined with a specific application area, such as plastic film/sheet, cable/wire insulation, medical products, automotive parts, etc., the user is directed to the trade names and/or chemicals that have that specific functional/application attribute. The generic component names are distinguished from the trade names by boldfaced type.

**Part IV-- Manufacturers Directory** contains detailed contact information for worldwide manufacturers, their branches, and distributors of trade name products and chemical components that are referenced in this handbook. Wherever possible, telephone, telefax, toll-free numbers, e-mail and Internet addresses, and complete mailing addresses are included for each company.

### Appendix

**CAS Number Index** contains CAS number entries followed by a listing of their trade name product and chemical equivalents in alphabetical order. The chemical name is in boldfaced type.

**EINECS/ELINCS Number Index** contains EINECS/ELINCS number entries followed by a listing of its trade name product

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and generic chemical equivalents in alphabetical order. The chemical names are in boldfaced type.

*Glossary* contains definitions of terminology associated with plastic and rubber chemicals and materials.

We are confident that those involved in any aspect of the plastic and rubber industry will find this compendium an important

addition to their reference library. We are also pleased to provide this reference as an electronic product..

This reference is the culmination of many years of research, investigation of product sources acquired through personal contacts and correspondences with major chemical manufacturers worldwide, as well as toxicological databases, chemical references, trade magazines and journals.

M. & I. Ash

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# Abbreviations

|            |                                                                                                                                                                 |                  |                                                                            |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------|
| abs.       | absolute                                                                                                                                                        | B/S              | butadiene/styrene                                                          |
| ABS        | acrylonitrile-butadiene-styrene                                                                                                                                 | BSI              | British Standards Institute                                                |
| absorp.    | absorption                                                                                                                                                      | BSS              | British Standard Sieve                                                     |
| ACGIH      | American Conference of Governmental Industrial Hygienists                                                                                                       | Btu              | British thermal unit                                                       |
| ACN        | acrylonitrile                                                                                                                                                   | B.U.             | Brabender units (viscosity)                                                |
| act.       | active                                                                                                                                                          | BVC              | British Veterinary Codex                                                   |
| ADI        | acceptable daily intake (FAO/WHO)                                                                                                                               | BVO              | brominated vegetable oil                                                   |
| ADR        | adverse drug reactions                                                                                                                                          | byprod.          | byproduct(s)                                                               |
| AEL        | acceptable exposure limit                                                                                                                                       | C                | degrees Centigrade                                                         |
| adsorp.    | adsorption                                                                                                                                                      | CAA              | Clean Air Act                                                              |
| agric.     | agricultural                                                                                                                                                    | CAB              | cellulose acetate butyrate                                                 |
| agrochem.  | agrochemical                                                                                                                                                    | calcd.           | calculated                                                                 |
| a.i.       | active ingredient                                                                                                                                               | cap.             | capillary                                                                  |
| AIHA       | American Industrial Hygiene Association                                                                                                                         | CAS              | Chemical Abstracts Service                                                 |
| alc.       | alcohol                                                                                                                                                         | CC               | closed cup                                                                 |
| Am., Amer. | American                                                                                                                                                        | cc               | cubic centimeter(s)                                                        |
| amts.      | amounts                                                                                                                                                         | CCFAC            | Codex Committee on Food Additives and Contaminants                         |
| anhyd.     | anhydrous                                                                                                                                                       | CCl <sub>4</sub> | carbon tetrachloride                                                       |
| ANSI       | American National Standards Institute                                                                                                                           | CD               | completely denatured                                                       |
| AOC        | assimilable organic carbon                                                                                                                                      | CDA              | completely denatured alcohol                                               |
| APHA       | American Public Health Association                                                                                                                              | CEL              | corporate exposure limit                                                   |
| API        | Active Pharmaceutical Ingredients                                                                                                                               | CERCLA           | Comprehensive Environmental Response, Compensation, & Liability Act (U.S.) |
| applic(s). | application(s)                                                                                                                                                  | CFC              | chlorofluorocarbon                                                         |
| aq.        | aqueous                                                                                                                                                         | CFN              | Council on Food & Nutrition (Am. Medical Assoc.)                           |
| AS         | acrylonitrile-butadiene-styrene                                                                                                                                 | CFR              | Code of Federal Regulations (U.S.)                                         |
| ASA        | acrylic-styrene-acrylonitrile                                                                                                                                   | cfu              | colony-forming units                                                       |
| ASBC       | Am. Society of Brewing Chemists                                                                                                                                 | cGMP             | current good manufacturing practice (U.S. FDA)                             |
| ASTM       | American Society for Testing and Materials                                                                                                                      | ch.              | Chapter                                                                    |
| ATH        | alumina trihydrate                                                                                                                                              | char.            | characteristic, characterized                                              |
| atm        | atmosphere                                                                                                                                                      | chel.            | chelation                                                                  |
| at.wt.     | atomic weight                                                                                                                                                   | chem(s).         | chemical(s)                                                                |
| autoignit. | autoignition                                                                                                                                                    | CI               | Color Index                                                                |
| aux(s).    | auxiliary, auxiliaries                                                                                                                                          | CIIR             | chlorobutyl rubber                                                         |
| avail.     | available                                                                                                                                                       | CIR              | Cosmetic Ingredient Review                                                 |
| avg.       | average                                                                                                                                                         | cks              | centistoke(s)                                                              |
| a.w.       | atomic weight                                                                                                                                                   | cl               | clear                                                                      |
| BAC        | biological activated carbon                                                                                                                                     | CL               | ceiling concentration                                                      |
| BATF       | Bureau of Alcohol, Tobacco, and Firearms (U.S.)                                                                                                                 | cm               | centimeter(s)                                                              |
| BDG        | butyl diglycol                                                                                                                                                  | cm <sup>3</sup>  | cubic centimeter(s)                                                        |
| BDOC       | biodegradable dissolved organic carbon                                                                                                                          | CMC              | carboxymethylcellulose                                                     |
| BfArM      | Bundesinstitut für Arzneimittel und Medizinprodukte (Federal Institute for Drugs and Medical Devices, Germany)                                                  | CMC              | critical Micelle concentration                                             |
| BGA        | Federal Republic of Germany Health Dept. certification                                                                                                          | c.m.p.           | capillary melting point                                                    |
| BgVV       | Bundesinstitut für Gesundheitlichen Verbraucherschutz und Veterinärmedizin (Federal Institute for Consumer Health Protection and Veterinary Medicine) (Germany) | CNS              | central nervous system                                                     |
| BHA        | butylated hydroxyanisole                                                                                                                                        | CO               | carbon monoxide                                                            |
| BHT        | butylated hydroxytoluene                                                                                                                                        | COC              | Cleveland Open Cup                                                         |
| biochem.   | biochemical                                                                                                                                                     | COD              | chemical oxygen demand                                                     |
| biodeg.    | biodegradable                                                                                                                                                   | coeff.           | coefficient                                                                |
| bldg.      | building                                                                                                                                                        | COF              | coefficient of friction                                                    |
| blk.       | black                                                                                                                                                           | compat.          | compatible                                                                 |
| BMC        | bulk molding compound                                                                                                                                           | compd(s).        | compound(s)                                                                |
| BOD        | biochemical oxygen demand                                                                                                                                       | compr.           | compression                                                                |
| BP         | British Pharmacopeia                                                                                                                                            | conc(s).         | concentrated, concentration(s)                                             |
| b.p.       | boiling point                                                                                                                                                   | conduct.         | Conductive, conductivity                                                   |
| BR         | butadiene rubbers, polybutadienes                                                                                                                               | const.           | constant                                                                   |
| B&R        | Ball & Ring                                                                                                                                                     | contg.           | containing                                                                 |
| br., brn.  | brown                                                                                                                                                           | cosolv.          | cosolvent                                                                  |
| brnsh.     | brownish                                                                                                                                                        | CP               | Canadian Pharmacopeia                                                      |
| BS         | British Standards                                                                                                                                               | cp               | centipoise(s)                                                              |
|            |                                                                                                                                                                 | CPE              | chlorinated polyethylene                                                   |
|            |                                                                                                                                                                 | cps              | centipoise(s)                                                              |
|            |                                                                                                                                                                 | CPVC             | chlorinated polyvinyl chloride                                             |

|           |                                                                 |          |                                                                |
|-----------|-----------------------------------------------------------------|----------|----------------------------------------------------------------|
| CR        | chloroprene rubber, polychloroprene                             | EPDM     | ethylene-propylene-diene rubber, ethylene-propylene terpolymer |
| cryst.    | crystalline, crystallization                                    | EPR      | ethylene-propylene rubber                                      |
| cs        | centistoke(s)                                                   | EPS      | expandable polystyrene                                         |
| cSt       | centistoke(s)                                                   | equip.   | equipment                                                      |
| CTFA      | Cosmetic, Toiletry and Fragrance Association                    | equiv.   | equivalent                                                     |
| ctks      | centistoke(s)                                                   | ESCR     | environmental stress crack resistance                          |
| CWA       | Clean Water Act                                                 | ESD      | electrostatic discharge                                        |
| cwt       | hundred weight                                                  | ESO      | epoxidized soybean oil                                         |
| DAB       | Deutsche. Arzneibuch (German Pharmacopoeia)                     | ESP      | electrostatic protection                                       |
| DAC       | Deutscher Arzneimittel Codex (German Pharmacopoeia Codex)       | esp.     | especially                                                     |
| D&C       | Drugs & Cosmetics                                               | EU       | European Union                                                 |
| dc        | direct current                                                  | Eur.Ph.  | European Pharmacopoeia                                         |
| DE        | dextrose equivalent                                             | EVA      | ethylene vinyl acetate                                         |
| DEA       | diethanolamide, diethanolamine                                  | evap.    | Evaporation                                                    |
| dec.      | decomposes                                                      | exc.     | excellent                                                      |
| decomp.   | decomposition                                                   | F        | degrees Fahrenheit                                             |
| DEG       | diethylene glycol                                               | FA       | fatty acid                                                     |
| deliq.    | deliquescent                                                    | FAO      | Food and Agriculture Organization (United Nations)             |
| dens.     | density                                                         | FAP      | Food Additive Petition (U.S.)                                  |
| deriv(s). | derivative(s)                                                   | FCC      | Food Chemicals Codex                                           |
| descrip.  | description                                                     | FCC      | fluorochlorocarbon                                             |
| dg        | decigram(s)                                                     | FDA      | Food and Drug Administration (U.S.)                            |
| DI        | deionized                                                       | FD&C     | Foods, Drugs, and Cosmetics                                    |
| diam.     | diameter                                                        | FEMA     | Flavor and Extract Manufacturers' Association (U.S.)           |
| dielec.   | dielectric                                                      | FEP      | fluorinated ethylene propylene                                 |
| dil.      | dilute                                                          | FFA      | free fatty acid                                                |
| DIN       | Deutsches Institut fuer Normung (German Standards Organization) | FFDCA    | Federal Food, Drug, and Cosmetic Act                           |
| disp.     | dispersible, dispersion                                         | FG       | food grade                                                     |
| dissip.   | dissipation                                                     | FIFRA    | Federal Insecticide, Fungicide, and Rodenticide Act (U.S. EPA) |
| dist.     | distilled                                                       | FKM      | fluoroelastomer                                                |
| distort.  | distortion                                                      | fl       | fluid                                                          |
| distrib.  | distributor                                                     | flamm.   | flammable, flammability                                        |
| dk.       | dark                                                            | flex.    | flexural                                                       |
| DMF       | dimethyl formamide                                              | FNB      | Food and Nutrition Board                                       |
| DMF       | Drug Master Files                                               | f.p.     | freezing point                                                 |
| DO        | dissolved oxygen                                                | FP       | French Pharmacopoeia                                           |
| D.O.      | dissolved oxygen                                                | FR       | flame retardant                                                |
| DOC       | dissolved organic carbon                                        | FR-ABS   | flame retardant ABS                                            |
| DOM       | dissolved organic matter                                        | FRP      | fiberglass-reinforced plastics                                 |
| DOP       | dioctyl phthalate                                               | F-T      | Fischer-Tropsch                                                |
| DOT       | Department of Transportation (U.S.)                             | ft       | foot, feet                                                     |
| DPG       | diphenyl guanidine, dipropylene glycol                          | f.w.     | formula weight                                                 |
| DSB       | dry solids basis                                                | G        | giga                                                           |
| DSI       | Canadian Provisional Domestic Substance list                    | g        | gram(s)                                                        |
| DTUL      | deflection temperature under load                               | gal      | gallon(s)                                                      |
| DVB       | divinylbenzene                                                  | g/d      | gram/dyne                                                      |
| DW        | distilled water, deionized water                                | GFRP     | glass fiber-reinforced plastic                                 |
| DWV       | drainage, waste and vent                                        | G-H      | Gardner-Holdt                                                  |
| eb, EB    | electron beam                                                   | GI       | gastro-intestinal                                              |
| EC        | European Community                                              | glac.    | glacial                                                        |
| EC50      | environmental concentration, 50%                                | GLP      | good laboratory practice                                       |
| EDTA      | ethylenediamine tetraacetic acid                                | GLY      | glycine                                                        |
| EE        | epoxy equivalent                                                | GMP      | good manufacturing practice                                    |
| EEC       | European Economic Community                                     | gpd      | gallons per day                                                |
| EED       | environmental endocrine disrupter                               | gpm      | gallons per minute                                             |
| EEW       | epoxide equivalent weight                                       | GPPS     | general purpose polystyrene                                    |
| e.g.      | for example                                                     | gpt      | gallons per ton                                                |
| EGC       | Epoxide Group Content                                           | gr.      | gravity                                                        |
| EINECS    | European Inventory of Existing Commercial Chemical Substances   | gran.    | granules, granular                                             |
| elec.     | electrical                                                      | GRAS     | generally regarded as safe                                     |
| ELINCS    | European List of Notified Chemical Substances                   | grn(sh). | green. greenish                                                |
| elong.    | elongation                                                      | GRP      | glass-reinforced plastics, glass-reinforced polyester          |
| EMI       | electromagnetic interference                                    | GVS      | Gardner varnish scale (color)                                  |
| EMS       | electromagnetic shielding                                       | GWP      | Global warming potential                                       |
| ENB       | 5-ethylidene-2-norbornene                                       | h        | hour(s)                                                        |
| EO        | ethylene oxide                                                  | HAF      | high abrasion furnace carbon black                             |
| EP        | European Pharmacopoeia                                          | HALS     | hindered amine light stabilizer                                |
| EP        | extreme pressure                                                | HAP      | hazardous air pollutant                                        |
| EPA       | Environmental Protection Agency (U.S.)                          | HAPS     | hazardous air pollutants                                       |
|           |                                                                 | HAP's    | hazardous air pollutants                                       |

|            |                                                              |             |                                                   |
|------------|--------------------------------------------------------------|-------------|---------------------------------------------------|
| HB         | horizontal burning                                           | LDPE        | low-density polyethylene                          |
| HC         | hydrocarbon                                                  | LED         | light-emitting diode                              |
| HCFC       | hydrochlorofluorocarbon                                      | lel         | lower explosive level                             |
| HCl        | hydrochloride, hydrochloric acid                             | lg.         | large                                             |
| HDPE       | high-density polyethylene                                    | liq.        | liquid                                            |
| HDT        | heat distortion (deflection) temp.                           | LLDPE       | linear low-density polyethylene                   |
| HFC        | hydrofluorocarbon                                            | LMDPE       | linear medium-density polyethylene                |
| Hg         | mercury                                                      | LOEL        | lowest observed effect level                      |
| HIPS       | high-impact polystyrene                                      | lt.         | light                                             |
| HLB        | hydrophilic lipophilic balance                               | Ltd.        | Limited                                           |
| HMIS       | Hazardous Material Identification System                     | LVP         | low vapor pressure                                |
| hr         | hour(s)                                                      | M           | mega                                              |
| HTST       | high temperature short-time pasteurization                   | M           | mole                                              |
| HEUR       | hydrophobically modified ethoxylate urethane                 | m           | milli                                             |
| HVAC       | heating, ventilation, air conditioning                       | m           | meter(s)                                          |
| HVP        | hydrolyzed vegetable protein                                 | m-          | meta                                              |
| hyd.       | hydroxyl                                                     | manuf.      | manufacturer                                      |
| hydrog.    | hydrogenated                                                 | max.        | maximum                                           |
| Hz         | hertz                                                        | mbar        | millibar                                          |
| IARC       | International Agency for Research on Cancer (United Nations) | MCF         | methyl chloroform                                 |
| i.b.p.     | initial boiling point                                        | MCL         | maximum contaminant level                         |
| IDLH       | immediately dangerous to life and health                     | MCT         | medium chain triglycerides                        |
| I&I        | industrial and institutional                                 | MD          | machine direction, mold direction                 |
| IIR        | isobutylene-isoprene rubber                                  | MEA         | monoethanolamine, monoethanolamide                |
| IM         | intramuscular                                                | mech.       | mechanical                                        |
| immisc.    | immiscible                                                   | med.        | medium                                            |
| IMP        | inosine monophosphate                                        | MEK         | methyl ethyl ketone                               |
| in.        | inch(es)                                                     | mfg.        | manufacture                                       |
| Inc.       | Incorporated                                                 | mg          | milligram(s)                                      |
| inc.       | increases, increased                                         | mgd         | million gallons/day                               |
| INCI       | International Nomenclature Cosmetic Ingredient               | MIBK        | methyl isobutyl ketone                            |
| incl.      | including                                                    | microcryst. | microcrystalline                                  |
| incompat.  | incompatible                                                 | microgran.  | microgranules, microgranular                      |
| incorp.    | Incorporated, incorporation                                  | MID         | Meat Inspection Division (USDA)                   |
| indent.    | indentation                                                  | MIL         | Military Specifications                           |
| ing.       | ingestion                                                    | mil         | 0.001 inch                                        |
| ingred(s). | ingredient(s)                                                | min         | minute(s)                                         |
| inh.       | inhalation                                                   | min.        | mineral                                           |
| inj.       | injection                                                    | min.        | minimum                                           |
| inorg.     | inorganic                                                    | MIPA        | monoisopropanolamine, monoisopropanolamide        |
| INS        | International Numbering System for Food Additives            | misc.       | miscible, miscellaneous                           |
| insol.     | insoluble                                                    | MITI        | Japanese Inventory of Chemical Substances (list)  |
| Int'l.     | International                                                | mixt(s).    | mixture(s)                                        |
| IOFI       | International Organization of the Flavor Industry            | ml          | milliliter(s)                                     |
| IP         | intra-peritoneal                                             | MLD         | minimum lethal dose                               |
| IPA        | isopropyl alcohol                                            | mm          | millimeter(s)                                     |
| IPM        | isopropyl myristate                                          | MMAP        | modified mixed aniline point                      |
| IPP        | isopropyl palmitate                                          | MMW-HDPE    | medium molecular weight high density polyethylene |
| IR         | isoprene rubber (synthetic), polyisoprene                    | mN          | millinewton(s)                                    |
| irreg.     | irregular                                                    | mo, mos     | month(s)                                          |
| IU         | International Unit                                           | mod.        | moderately                                        |
| IV         | intravenous                                                  | mod.        | modulus                                           |
| J          | joule                                                        | monocl.     | monoclinic                                        |
| JCIC       | Japanese Cosmetic Ingredients Codex                          | m.p.        | melting point                                     |
| JCID       | Japanese Cosmetic Ingredients Dictionary                     | mPa·s       | millipascal-second(s)                             |
| JECFA      | Joint Expert Committee on Food Additives                     | mppcf       | million particles per cubic foot                  |
| JP         | Japanese Pharmacopoeia                                       | MRL         | maximum residual limits                           |
| JSCI       | Japanese Standard of Cosmetic Ingredients                    | MSDS        | Material Safety Data Sheet                        |
| JSFA       | Japan Standards for Food Additives                           | MT          | medium thermal                                    |
| k          | kilo                                                         | mus         | mouse                                             |
| KB         | Kauri-Butanol                                                | MVTR        | moisture vapor transmission rate                  |
| kg         | kilogram(s)                                                  | m.w.        | molecular weight                                  |
| KTPP       | potassium tripolyphosphate                                   | N           | normal                                            |
| KU         | Krebs units                                                  | nat.        | natural                                           |
| l          | liter(s)                                                     | NB          | nonbreaking                                       |
| lb         | pound(s)                                                     | N/B         | nitrile-butadiene                                 |
| LC50       | lethal concentration 50%                                     | NBR         | nitrile rubber, nitrile-butadiene rubber          |
| LCLo       | lethal concentration low                                     | NC          | nitrocellulose                                    |
| LD0        | lethal dose 0%                                               | NCI         | National Cancer Institute                         |
| LD50       | lethal dose 50%                                              | need.       | needles                                           |
| LDLo       | lowest published lethal dose                                 | neg.        | negative                                          |
|            |                                                              | neut.       | neutral, neutralized                              |

|                  |                                                               |            |                                                              |
|------------------|---------------------------------------------------------------|------------|--------------------------------------------------------------|
| NF               | National Formulary                                            | pkg.       | packaging                                                    |
| NFPA             | National Fire Protection Association                          | PM, P-M    | Pensky-Martens                                               |
| ng               | nanogram                                                      | PMCC       | Pensky-Martens closed cup                                    |
| NIOSH            | National Institute for Occupational Safety and Health (U.S.)  | PMMA       | polymethyl methacrylate                                      |
| nm               | nanometer                                                     | PMOC       | Pensky-Martens open cup                                      |
| no.              | number                                                        | PO         | propylene oxide                                              |
| N <sub>2</sub> O | nitrous oxide                                                 | POC        | particulate organic carbon                                   |
| NO <sub>x</sub>  | nitrogen oxides                                               | POE        | polyoxyethylene, polyoxyethylated                            |
| NOEL             | no observed effect level                                      | polyunsat. | polyunsaturated                                              |
| NOI              | not otherwise indexed (U.S. DOT)                              | PoM        | prescription-only medicine                                   |
| nonalc.          | nonalcoholic                                                  | POM        | polyoxymethylene                                             |
| nonaq.           | nonaqueous                                                    | POP        | polyoxypropylene, polyoxypropylated                          |
| nonbiodeg.       | nonbiodegradable                                              | POP's      | persistant organic pollutants                                |
| nonflamm.        | nonflammable                                                  | powd.      | powder                                                       |
| nonyel.          | nonyellowing                                                  | PP         | polypropylene                                                |
| N.O.S.           | not otherwise specified (transport regulations)               | ppb        | parts per billion                                            |
| NPRI             | National Pollutant Release Inventory (Canada)                 | PPE        | polyphenylene ether                                          |
| NR               | natural rubber, isoprene rubber (natural)                     | PPG        | polypropylene glycol                                         |
| NSF              | National Sanitation Foundation, National Standards Foundation | pph        | parts per hundred (percent)                                  |
| NTP              | National Toxicology Program (U.S.)                            | ppm        | parts per million                                            |
| NV               | nonvolatiles                                                  | PPO        | polyphenylene oxide                                          |
| o-               | ortho                                                         | PPS        | polyphenylene sulfide                                        |
| OBPA             | oxybisphenoxarsine                                            | ppt        | parts per trillion                                           |
| OC               | open cup                                                      | pract.     | practically                                                  |
| ODC              | ozone-depleting compound                                      | prep(s).   | preparation(s)                                               |
| ODP              | ozone-depletion potential                                     | prod.      | product(s), production                                       |
| OEL              | occupational exposure limit                                   | props.     | properties                                                   |
| OEM              | original equipment manufacturer                               | PS         | polystyrene                                                  |
| OMS              | odorless mineral spirits                                      | ps         | poise                                                        |
| org.             | organic                                                       | psi        | pounds per square inch                                       |
| orig.            | original                                                      | psia       | pounds per square inch absolute                              |
| OSHA             | Occupational Safety and Health Administration (U.S.)          | psig       | pounds per square inch gauge                                 |
| OTC              | over-the-counter                                              | pt.        | point                                                        |
| o/w              | oil-in-water                                                  | Pt-Co      | platinum-cobalt                                              |
| oz               | ounce                                                         | PTFE       | polytetrafluoroethylene                                      |
| p-               | para                                                          | PTMEG      | polytetramethylene ether glycol                              |
| Pa               | Pascal                                                        | PU         | polyurethane                                                 |
| PBT              | polybutylene terephthalate                                    | PUF        | polyurethane foam                                            |
| pbw              | parts by weight                                               | PUR        | polyurethane                                                 |
| PC               | polycarbonate                                                 | PVA        | polyvinyl alcohol                                            |
| PCB              | polychlorinated biphenyl                                      | PVAc       | polyvinyl acetate                                            |
| pcf              | pounds per cubic foot                                         | PVAL       | polyvinyl alcohol                                            |
| PCMX             | p-chloro-m-xylene                                             | PVB        | polyvinyl butyral                                            |
| PCP              | Pest Control Product Act, 1972 (Canada)                       | PVC        | polyvinyl chloride                                           |
| PCTFE            | polychlorotrifluoroethylene                                   | PVC-P      | plasticized polyvinyl chloride                               |
| PDIS             | primary dermal irritation score                               | PVC-U      | unplasticized polyvinyl chloride                             |
| PE               | polyethylene                                                  | PVDC, PVdC | polyvinylidene chloride                                      |
| PEEK             | polyetheretherketone                                          | PVDF       | polyvinylidene fluoride                                      |
| PEG              | polyethylene glycol                                           | PVM        | polyvinyl methyl ether                                       |
| PEIS             | primary eye irritation score                                  | PVM/MA     | polyvinyl methyl ether/maleic anhydride                      |
| PEK              | polyetherketone                                               | PVP        | polyvinylpyrrolidone                                         |
| PEL              | permissible exposure level                                    | PWB        | partial weight bearing                                       |
| perc             | perchloroethylene                                             | qt         | quart                                                        |
| percut.          | percutaneous                                                  | quat.      | quaternary                                                   |
| PES              | polyether sulfone                                             | R&B        | Ring & Ball                                                  |
| PET              | polyethylene terephthalate                                    | rbt        | rabbit                                                       |
| petrol.          | petroleum                                                     | RCRA       | Resource Conservation and Recovery Act (U.S. EPA 40CFR §261) |
| PFPE             | perfluoropolyether                                            | R&D        | research and development                                     |
| PG               | propylene glycol                                              | RDA        | recommended daily allowances                                 |
| pH               | hydrogen-ion concentration                                    | rdsh.      | reddish                                                      |
| Ph.              | Pharmacopoeia                                                 | rec.       | recommended                                                  |
| Ph.Eur.          | European Pharmacopoeia                                        | ref.       | refractive                                                   |
| PHA              | phosphonohydroxyacetic acid                                   | reg.       | registry                                                     |
| pharm.           | pharmaceutical                                                | regs.      | regulations                                                  |
| Ph.Eur.          | European Pharmacopoeia                                        | REL        | recommended exposure limit                                   |
| phr              | parts per hundred of rubber or resin                          | rep.       | represents                                                   |
| PIB              | polyisobutylene                                               | resist.    | resistance, resistant, resistivity                           |
| PIN              | product identification number                                 | resp.      | respectively                                                 |
| PIR              | polyisocyanurate                                              | RFI        | radio frequency interference                                 |
| Pk               | peak concentration                                            | r.h.       | relative humidity                                            |
|                  |                                                               | rhomb.     | rhombic                                                      |

|            |                                                         |          |                                                                         |
|------------|---------------------------------------------------------|----------|-------------------------------------------------------------------------|
| RIM        | reaction injection molded/molding                       | TKPP     | tetrapotassium pyrophosphate                                            |
| RO         | reverse osmosis                                         | TLV      | Threshold Limit Value                                                   |
| rpm        | revolutions per minute                                  | TLV-CL   | Threshold Limit Value/ceiling limit                                     |
| RQ         | reportable quantity                                     | TLV-STEL | Threshold Limit Value/short term exposure limit                         |
| R.T.       | room temperature                                        | TLV-TWA  | Threshold Limit Value/time weighted average                             |
| RTECS      | Registry of Toxic Effects of Chemical Substances (U.S.) | TMC      | thick molding compound                                                  |
| RTM        | resin transfer molding                                  | TOC      | Tag open cup, total organic carbon                                      |
| RTV        | room temperature vulcanizing                            | tox.     | toxicity                                                                |
| RV         | recreational vehicle                                    | TPE      | thermoplastic elastomer                                                 |
| s          | second(s)                                               | TPU      | thermoplastic polyurethane                                              |
| s-         | secondary                                               | TRI      | Toxic Release Inventory                                                 |
| SADT       | self accelerating decomposition temp.                   | TSCA     | Toxic Substances Control Act                                            |
| SAN        | styrene-acrylonitrile                                   | tsp      | teaspoon                                                                |
| sapon.     | saponification                                          | TSS      | total suspended solids                                                  |
| SARA       | Superfund Amendments & Reauthorization Act (U.S.)       | TWA      | time weighted average                                                   |
| sat.       | saturated                                               | TWC      | time weighted concentration                                             |
| S/B        | styrene/butadiene                                       | typ.     | typical                                                                 |
| SBR        | styrene/butadiene rubber                                | uel      | upper explosive limits                                                  |
| SBS        | styrene-butadiene-styrene                               | UF       | urea formaldehyde                                                       |
| SD         | specially denatured                                     | UF       | ultra filtration                                                        |
| SDA        | specially denatured alcohol                             | UHF      | ultra high frequency                                                    |
| SE         | self-emulsifying                                        | UHMW     | ultra high molecular weight                                             |
| SEBS       | styrene-ethylene/butylene-styrene                       | UHMWPE   | ultra high molecular weight polyethylene                                |
| sec.       | secondary                                               | UHT      | ultra high temperature                                                  |
| semicryst. | semicrystalline                                         | UL       | Underwriter's Laboratory                                                |
| semiliq.   | semiliquid                                              | UN No.   | United Nations Substance Identification Number (for transport purposes) |
| semisyn.   | semisynthetic                                           | unsat.   | unsaturated                                                             |
| sl.        | slight, slightly                                        | UPVC     | unplasticized polyvinyl chloride                                        |
| sm.        | small                                                   | USDA     | U.S. Department of Agriculture                                          |
| SMA        | styrene maleic anhydride                                | USFA     | United States Food Additives                                            |
| SMC        | sheet molding compound                                  | USP      | United States Pharmacopeia                                              |
| SMG        | succinylated monoglycerides                             | uv, UV   | ultraviolet                                                             |
| SNAP       | Significant New Alternative Policy (U.S. EPA)           | V        | volt                                                                    |
| soften.    | softening                                               | VA       | vinyl acetate                                                           |
| sol.       | soluble, solubility                                     | VAE      | vinyl acetate ethylene                                                  |
| solid.     | solidification                                          | VC       | vinyl chloride                                                          |
| sol'n.     | solution                                                | VCA      | vinyl chloride-acrylic                                                  |
| solv(s).   | solvent(s)                                              | VdC, VDC | vinylidene chloride                                                     |
| sp.        | specific                                                | veg(s).  | vegetable, vegetables                                                   |
| spec.      | specification, specialty                                | visc.    | viscous, viscosity                                                      |
| SPF        | sun protection factor                                   | VM&P     | Varnish Makers and Painters                                             |
| spp.       | non-specified species                                   | VOC      | volatile organic compounds                                              |
| SRF        | semireinforced furnace                                  | vol.     | volume                                                                  |
| SS         | stainless steel                                         | v/v      | volume by volume                                                        |
| SSU        | Saybolt Universal Seconds                               | wh.      | white                                                                   |
| std.       | standard                                                | WEEL     | Workplace Environmental Exposure Level (U.S.)                           |
| STEL       | short term exposure limit                               | WFC      | World Food Council                                                      |
| Stod.      | Stoddard solvent                                        | WHMIS    | Workplace Hazardous Materials Information System (Canada)               |
| STP        | standard temperature and pressure                       | WHO      | World Health Organization (United Nations)                              |
| str.       | strength                                                | wks      | weeks                                                                   |
| subcut.    | subcutaneous                                            | w/o      | water-in-oil                                                            |
| subl.      | sublimes                                                | wt.      | weight                                                                  |
| surf.      | surface                                                 | w/v      | weight by volume                                                        |
| SUS        | Saybolt Universal Seconds                               | w/w      | weight by weight                                                        |
| susp.      | suspension                                              | XLPE     | crosslinked polyethylene                                                |
| syn.       | synthetic                                               | X-PE     | crosslinked polyethylene                                                |
| t          | tertiary                                                | yel.     | yellow                                                                  |
| TAPPI      | Technical Association of the Pulp & Paper Industry      | ylsh.    | yellowish                                                               |
| TBHQ       | tert-butyl hydroquinone                                 | yr       | year                                                                    |
| TCC        | Tag closed cup                                          | #        | number                                                                  |
| TCLo       | toxic concentration low                                 | %        | percent                                                                 |
| TDI        | toluene diisocyanate                                    | <        | less than                                                               |
| TDL0       | toxic dose low                                          | >        | greater than                                                            |
| TDS        | total dissolved solids                                  | ≤        | less than or equal to                                                   |
| TEA        | triethanolamine, triethanolamide                        | ±        | plus or minus                                                           |
| tech.      | technical                                               | ≥        | greater than or equal to                                                |
| temp.      | temperature                                             | @        | at                                                                      |
| tens.      | tensile, tension                                        | α        | alpha                                                                   |
| tert       | tertiary                                                | β        | beta                                                                    |
| THF        | tetrahydrofuran                                         | δ, Δ     | delta                                                                   |
| THMs       | trihalomethanes                                         |          |                                                                         |
| TIPA       | triisopropanolamine                                     |          |                                                                         |

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|               |         |               |                        |
|---------------|---------|---------------|------------------------|
| $\varepsilon$ | epsilon | $\mu$         | micron, micrometer     |
| $\gamma$      | gamma   | $\mu\text{g}$ | microgram              |
| $\Omega$      | omega   | $\approx$     | approximately equal to |

# Part I

## Trade Name Reference

*Properties:* M.w. 1600-2400; sp.gr. 1.05; visc. 160-230 cSt; pour pt. -40 C; flash pt. 285 C; ref. index 1.490; surf. tens. 24.5 dynes/cm; dielec. const. 2.83; 18-22% diphenylsiloxane

## PE 30 H [Polytechs]

*Chem. Descrip.:* 30% specialty olefinic resin in a LDPE carrier

*Uses:* Antislip agent between sheets of polyethylene

*Features:* Compatible with LDPE, LLDPE, VLDPE, UV stabilizers

*Regulatory:* Products with direct food contact are allowed under FDA, EEC

*Properties:* Milky, opaque gran.; dens. 0.925; melt index 0.5 g/ 10 min.

*Use Level:* 3-5%

## PE-AB 07 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 10% Natural silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 1.5-3%

## PE-AB 19 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 15% Natural silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 1-2%

## PE-AB 22 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 40% Calcium carbonate in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 0.5-1%

## PE-AB 30 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 30% Natural silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 0.5-1.5%

## PE-AB 33 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 5% Precipitated silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 0.5-1.5%

## PE-AB 48 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 50% Natural silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 0.3-0.6%

## PE-AB 73 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 25% Natural silica in LLDPE-based masterbatch

*Uses:* Antiblock agent for plastics

*Use Level:* 1-2%

## PE-AO 51 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 10% Phenolic in LLDPE-based masterbatch

*Uses:* Antioxidant for plastics

*Use Level:* 0.3-2%

## PE-AO 91 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 8% Phosphite and 2% phenolic in LLDPE-based masterbatch

*Uses:* Antioxidant for plastics

*Use Level:* 1-2%

## Pearlstick® 65-05 [Merquinsa]

*Chem. Descrip.:* Linear polycaprolactone-polyurethane

*Uses:* Additive for two-component adhesives used in wood and automotive industries; plasticizer in EVA, PVC, ASA hot melts for impregnation and textile coating

*Features:* Very high rate of crystallization

## PE-AS 05 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 2.5% Ethoxylated amine in LLDPE-based masterbatch

*Uses:* Antistat for plastics

*Use Level:* 2-4%

## PE-AS 74 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 5% Ethoxylated amine in LLDPE-based masterbatch

*Uses:* Antistat for plastics

*Use Level:* 1-3%

## PE-AS 109 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 5% Ethoxylated amine in LLDPE-based masterbatch

*Uses:* Antistat for plastics

*Use Level:* 1-3%

## PE-AS 253 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 50% polymeric antistatic

*Uses:* Antistat for polymers

*Use Level:* 8-20%

## PE-FR 240 [Constab Additive Polymers Ltd]

*Chem. Descrip.:* 30% FR HALS

*Uses:* Flame retardant for polymers

*Use Level:* 1.5-3.5%

## PEG 300 [Huntsman]

*Chem. Descrip.:* PEG 300 USP

CAS 25322-68-3; EINECS/ELINCS 220-045-1

*Uses:* Solubilizer, carrier, plasticizer, solvent for cosmetics, pesticides, metalworking lubricants, paints, resins, paper, film, printing inks, liq. pharm. preps., ointment bases; rubber release; textile aux.; visc. modifier for brake fluids; intermediate for PEG esters, PU foams; binder for capsules/pills

*Properties:* APHA 25 color; sol. in water and most polar org. solvs.; m.w. 285-315; sp.gr. 1.128; visc. 5.8 cst (99 C); pour pt. -12 C; flash pt. (OC) > 190 C; ref. index 1.463; pH 4.5-7.5; surf. tens. 44.6 dynes/cm; nonionic; 99% act.

*Environmental:* Biodeg.

## PEG 400 [Huntsman]

*Chem. Descrip.:* PEG 400 USP

CAS 25322-68-3; EINECS/ELINCS 225-856-4

*Uses:* Emulsifier, antistat for textiles; rubber; inks; cosmetics; paper; film; pesticide solubilizer/carrier; intermediate for PEG esters, PU foams; plasticizer, solvent for cork; metalworking lubricants; paints/resins; pharm. liq. preps., ointment bases, suppository bases; binder for capsules/pills; preservative for pathological specimens

*Properties:* APHA 25 color; sol. in water and most polar org. solvs.; m.w. 380-420; sp.gr. 1.130; visc. 7.3 cst (99 C); pour pt. 6 C; flash pt. (OC) > 215 C; ref. index 1.465; pH 4.5-7.5; surf. tens. 44.6 dynes/cm; nonionic; 99% act.

*Environmental:* Biodeg.

## PEG 600 [Huntsman]

*Chem. Descrip.:* PEG 600 USP

CAS 25322-68-3; EINECS/ELINCS 229-859-1

*Uses:* Emulsifier for textiles; pesticide solubilizer/carrier; binder for ceramics; intermediate for PEG esters, PU foams; cosmetics; pharms.; metalworking lubricants; resins; paper/film; inks; rubber release

*Properties:* APHA 10 color (25% aq.); sol. in water and most polar org. solvs.; m.w. 560-630; sp.gr. 1.127; visc. 10.4 cst (99 C); pour pt. 19 C; flash pt. (OC) > 230 C; ref. index 1.454; pH 4.5-7.5; surf. tens. 44.6 dynes/cm; nonionic; 99% act.

*Environmental:* Biodeg.

## PEG 1500 [Huntsman]

*Chem. Descrip.:* PEG 1500

*Uses:* Textile finishing and sizing; wood processing; latex lubricant; printing inks; pharms. (ointment bases, suppository bases); paper/film; preservative for pathological specimens

*Properties:* APHA 30 color (25% aq.); sol. in water and most polar org. solvs.; m.w. 1430-1570; sp.gr. 1.208; visc. 28.4 cst (99 C); pour pt. 46 C; flash pt. (OC) > 260 C; ref. index 1.456; pH 4.5-7.5; surf. tens. 53.1 dynes/cm (50% aq.); 100% act.

*Environmental:* Biodeg.

## PEG 4000 [Huntsman]

*Chem. Descrip.:* PEG 4000

CAS 25322-68-3; EINECS/ELINCS 203-989-9

*Uses:* Binder/plasticizer for ceramics; intermediate for copolymers, PEG esters; cosmetics; pharms.; metalworking lubricants and electropolishes; resins; paper/film; printing inks; rubber antistat, release, compding. aid; textile aux.; binder for capsules/pills; mounting of histological specimens

*Properties:* APHA 50 color (25% aq.); sol. in water and most polar org. solvs.; m.w. 3300-4000; sp.gr. 1.217; visc. 130-180 cst (99 C); pour pt. 56 C; flash pt. (OC) > 260 C; ref. index 1.456; pH 4.5-7.5; surf. tens. 54.4 dynes/cm (50% aq.); nonionic; 100% act.

*Environmental:* Biodeg.

## PEG 8000 [Huntsman]

*Chem. Descrip.:* PEG 8000 USP

CAS 25322-68-3

*Uses:* Intermediate for copolymers, PEG esters; cosmetics; pharms. (suppository bases); binder for capsules/pills; thickener for inks; mold release agent for rubber

*Properties:* Sol. in water and most polar org. solvs.; m.w. 7000-9000; sp.gr. 1.2; visc. 700-900 cst (99 C); pour pt. 55-60 C; flash pt. (OC) > 260 C; ref. index 1.456; pH 4.5-7.5; nonionic; 100% act.

*Environmental:* Biodeg.

- Properties:* Sp.gr. 1.66; tapped dens. 0.74 kg/l; oil absorp. 43 g oil/100 g pigment
- Perrindo® Maroon R-6436** [Bayer/Industrial Chems.]  
*Chem. Descrip.:* Perylene pigment (CI 71130)  
*Uses:* Pigment for aq. and high-solids systems, automotive and industrial finishes, PVC, and PP  
*Features:* Maroon pigment toner with exc. transparency and good rheological props.; exc. weatherfastness; good heat stability in PP  
*Properties:* Sp.gr. 1.68; tapped dens. 0.76 kg/l; oil absorp. 40 g oil/100 g pigment
- Perrindo® Red R-6418** [Bayer/Industrial Chems.]  
*Chem. Descrip.:* Perylene pigment (CI 71127)  
*Uses:* Pigment for high-solids coatings, automotive and industrial finishes, and plastics (PVC)  
*Features:* Red pigment toner with high tinctorial str.; more yel. than other perylene pigments; rec. for use with other org. and inorg. pigments to make attractive automotive stylings; exc. weatherfastness; good rheological props.  
*Properties:* Sp.gr. 1.73; tapped dens. 0.62 kg/l; oil absorp. 29 g oil/100 g pigment
- Perrindo® Red R-6420** [Bayer/Industrial Chems.]  
*Chem. Descrip.:* High chroma perylene pigment (CI 71127)  
*Uses:* Pigment for high-solids resin systems, automotive and industrial finishes, vinyl  
*Features:* Red pigment toner with exc. transparency and good rheological props. allowing high pigment loadings in high solids resin systems; very good weatherfastness  
*Properties:* Sp.gr. 1.67; tapped dens. 0.65 kg/l; oil absorp. 40 g oil/100 g pigment
- Persoft EK** [NOF]  
*Chem. Descrip.:* Sulfated fatty alcohol ethoxylate, sodium salt  
*Uses:* Emulsifier for vinyl polymerization; textile detergent; dyeing assistant; degreaser; surfactant for toiletries, dishwashing, shampoos, liq. detergents  
*Properties:* Lt. yel. liq. (turbid in winter); anionic; 30% conc.
- Persoft SK** [NOF]  
*Chem. Descrip.:* Sulfated fatty alcohol, sodium salt  
*Uses:* Detergent, emulsifier, dispersant, wetting agent for powd. detergents, dishwashing detergents; soaping agent for textiles; base for shampoos and liq. detergents; emulsifier for PVdC and PVC  
*Properties:* Lt. yel. liq. (solidifies in winter); anionic; 30% conc.  
*Environmental:* Biodeg.
- Persoft SL** [NOF]  
*Chem. Descrip.:* Sodium alkyl sulfate  
*Uses:* Emulsifier for polyvinylidene chloride and polyvinyl chloride polystyrene, polyvinyl chloride paste, powd. type detergent, textile industry, and dishwashing detergent  
*Properties:* Lt. yel. liq.
- PE-SA 21** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 5% Erucamide and 10% natural silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 1-3%
- PE-SA 24** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 2.5% Erucamide and 15% natural silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 2-5%
- PE-SA 40** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 3% Oleamide and 10% natural silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 1-3%
- PE-SA 49** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 10% Erucamide and 10% precipitated silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 0.5-1%
- PE-SA 60** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 4% Erucamide and 25% natural silica in LLDPE-based masterbatch
- Uses:* Slip/antiblock agent for plastics  
*Use Level:* 1-3%
- PE-SA 72** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 2% Erucamide and 10% natural silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 2-5%
- PE-SA 92** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 5% Oleamide and 10% natural silica in LLDPE-based masterbatch  
*Uses:* Slip/antiblock agent for plastics  
*Use Level:* 1-2%
- PE-SL 04** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 3% Erucamide in LLDPE-based masterbatch  
*Uses:* Slip agent for plastics  
*Use Level:* 2-5%
- PE-SL 31** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 3% Oleamide in LLDPE-based masterbatch  
*Uses:* Slip agent for plastics  
*Use Level:* 2-5%
- PE-SL 98** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 7.5% Erucamide in LLDPE-based masterbatch  
*Uses:* Slip agent for plastics  
*Use Level:* 0.5-2%
- PE-SL 164** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* 5% oleamide  
*Uses:* SLIP for polymers  
*Use Level:* 1.5-4%
- PetCat® R9** [Laurel Ind.]  
*Chem. Descrip.:* Antimony trioxide  
CAS 1309-64-4; EINECS/ELINCS 215-175-0  
*Uses:* Catalyst in PET polyester prod.; flame retardant  
*Properties:* Wh. fine cryst. powd., odorless; very sl. sol. in water; dissolves in conc. HCl, sulfuric acid, strong alkalis; m.w. 291.52; sp.gr. 5.3; m.p. 656 C; b.p. 1425 C; ref. index 2.1; 99.3-99.9% Sb<sub>2</sub>O<sub>3</sub>  
*Toxicology:* Avoid skin or eye contact, inhalation; use only with adequate ventilation  
*Storage:* Store in dry, well-ventilated area
- PetCat® R100** [Laurel Ind.]  
*Chem. Descrip.:* Antimony trioxide  
CAS 1309-64-4; EINECS/ELINCS 215-175-0  
*Uses:* Catalyst in polymerization of PET polyester  
*Features:* High reactivity  
*Properties:* Powd.; 0.2-0.04 µ avg. particle size; 0.05% max. on 325 mesh; high sol. in ethylene glycol; sp.gr. 5.3; bulk dens. ≈ 35 lb/ft<sup>3</sup>; surf. area 9-12.5 m<sup>2</sup>/g; m.p. 656 C; 99.9% min. act.
- PetCat® UF** [Laurel Ind.]  
*Chem. Descrip.:* Antimony trioxide  
CAS 1309-64-4; EINECS/ELINCS 215-175-0  
*Uses:* Catalyst in polymerization of PET polyester  
*Features:* High reactivity  
*Properties:* Powd.; 0.2-0.04 µ avg. particle size; 0.05% max. on 325 mesh; high sol. in ethylene glycol; sp.gr. 5.3; bulk dens. ≈ 35 lb/ft<sup>3</sup>; surf. area 9-12.5 m<sup>2</sup>/g; m.p. 656 C; 99.4% min. act.
- Petrac® 165** [Ferro/Polymer Addit.]  
*Chem. Descrip.:* Paraffin wax  
CAS 8002-74-2; EINECS/ELINCS 232-315-6  
*Uses:* Lubricant for rigid PVC compds.  
*Features:* Controls external lubrication and fusion  
*Regulatory:* FDA accepted  
*Properties:* Wh. sm. flakes; dens. 0.92 g/cm<sup>3</sup>; m.p. 162 F; congeal pt. 158 F; acid no. 0.1; flash pt. (COC) 510 F
- Petrac® 215** [Ferro/Polymer Addit.]  
*Chem. Descrip.:* Oxidized PE wax  
CAS 68441-17-8; EINECS/ELINCS 200-815-3  
*Uses:* Lubricant, gloss aid for rigid PVC compds.; lubricant, release agent in PVC compds. for film, sheet, and inj. molding  
*Features:* Controls external lubrication  
*Properties:* Off-wh. powd.; soften. pt. 215 F; acid no. 12

**Petrac® Zinc Stearate ZN-44 HS [Ferro/Polymer Addit.]***Chem. Descrip.:* Zinc stearate

CAS 557-05-1; EINECS/ELINCS 209-151-9

*Uses:* Mold release agent and lubricant used in plastics, polyolefins, PS*Features:* Rec. where minimal color development is desired*Properties:* Powd.; 99.5% through 325 mesh; dens. 19 lb/ft<sup>3</sup>; m.p. 121 C; 13.5% ZnO**Petronauba® C [Baker Petrolite]***Chem. Descrip.:* Oxidized microcryst. wax

CAS 97017-52-9

*Uses:* External lubricant, processing aid, slip agent, antiblocking agent, scuff/mar resist. aid in styrenics, polyolefins, TPOs, for formulation of emulsions, textile finish softeners, floor, auto, and liq. solv.-based polishes*Features:* Carnauba substitute*Properties:* Color 1.5 (D1500) wax; m.p. 93 C; acid no. 26; sapon. no. 54**PE-UV 234 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% Triclosan*Uses:* Antimicrobial for polymers*Use Level:* 0.5-3%**PE-UV 241 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 5% organotin preparation*Uses:* Antimicrobial for polymers*Use Level:* 0.5-3%**PE-UV 01 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 5% HALS, 5% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics**PE-UV 11 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS II in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1.5-4%**PE-UV 12 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% Benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1.5-3%**PE-UV 13 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS II and 10% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-2%**PE-UV 18 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% Nickel complex and 10% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-5%**PE-UV 23 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS III and 10% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1.5-5%**PE-UV 25 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% Nickel complex and 5% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 2.5-10%**PE-UV 32 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 7.5% HALS II and 7.5% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-3%**PE-UV 41 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 7.5% HALS II in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-4%**PE-UV 45 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 20% HALS II in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-2%**PE-UV 57 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS III in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1.5-4%**PE-UV 67 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 20% HALS III in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-2%**PE-UV 84 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS III and 5% benzophenone in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 2.5-10%**PE-UV 99 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS II, 10% benzophenone, and 2% antioxidant in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-2%**PE-UV 102 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 10% HALS III, 10% benzophenone, and 2% antioxidant in LLDPE-based masterbatch*Uses:* UV stabilizer for plastics*Use Level:* 1-2%**PE-UV 118 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 20% Benzophenone in LLDPE-based masterbatch*Uses:* UV absorber for plastics*Use Level:* 1-2%**PE-UV 119 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 25% Microground titanium dioxide in LLDPE-based masterbatch*Uses:* UV absorber for plastics*Use Level:* 4%**PE-UV 193 [Constab Additive Polymers Ltd]***Chem. Descrip.:* 20% HALS IV preparation*Uses:* UV stabilizer for polymers*Use Level:* 1.5-3%**Pfinyl® 402 [Specialty Mins.]***Chem. Descrip.:* Treated ground limestone

CAS 1317-65-3

*Uses:* Filler for rubber, flexible vinyl, PVC plastisols*Properties:* Powd.; 5 µ avg. particle size, 25 µ top size**PH [Shipro Kasei Kaisha]***Chem. Descrip.:* Mixt. of 2,2'-(1,2-ethenediyl) bis-(5-methylbenzoxazole) and dicylohexylphthalate*Uses:* Polymer additive for PVC*Properties:* Lt. yel. powd.; soften. pt. > 60 C; < 0.1% ash**Pharmasolve™ [ISP]***Chem. Descrip.:* N-Methyl-2-pyrrolidone, GMP grade

CAS 872-50-4; EINECS/ELINCS 212-828-1

*Uses:* Solvent, solubilizer for pharms.; chem. reaction medium; reaction solvent in many syntheses incl. vitamin E precursor; solubilizer for topicals for applic. to human or animal hair, skin; bioavailability enhancer for topicals; skin penetration enhancer; extraction solvent; bioadhesive; spray bandages*Features:* Nonaq.; increases water sol. of chloramphenicol, procaine, other therapeutic compds.; increases sol'n. stability of drugs in aq. sol'n.*Properties:* Cl. liq., amine-like odor; misc. with water, most org. solvs. incl. alcohols, ketones, aromatic and chlorinated hydrocarbons; sp.gr. 1.027 (25/4 C); visc. 1.65 cp; vapor pressure 0.29 mm Hg (20 C); m.p. -24.4 C; b.p. 202 C; flash pt.(OC) 95 C; ref. index 1.465-1.470; pH sl. alkaline; 99.85% min. purity*Toxicology:* CEL 100 ppm; low toxicity; LD50 (oral, rat) 4200 mg/kg, (dermal, rabbit) 8000 mg/kg; causes eye irritation; not a primary skin irritant; nonsensitizing; prolonged or repeated exposure causes severe skin irritation*Environmental:* Biodeg.*Precaution:* Combustible; flamm. limits 1.3-9.5%; noncorrosive; incompat. with strong oxidizing or reducing agents; heated to decomp., emits CO and NO<sub>x</sub> fumes

HMIS: Health 2, Flammability 2, Reactivity 0

*Storage:* Keep container and vapors away from heat, sparks, flame; keep container closed

- Properties:* Wh. granular powd.; sp.gr. 1.10; m.p. 120 C; 100% act.; 98% NV  
*Use Level:* 0.7-1.5%  
*Storage:* Store closed in cool, dry place @ < 35 C
- Powdermate® 508TEX [Troy]**  
*Chem. Descrip.:* Ester modified polyether oligomer  
*Uses:* Texturizer for powd. coatings, epoxies, acrylics, and polyesters  
*Properties:* Free-flowing wh. powd.; sp.gr. 1.10; m.p. 120 C; 100% act.; 98% NV  
*Use Level:* 0.5-2%  
*Storage:* Store closed in cool, dry place @ < 30 C
- Powdermate® 542D6 [Troy]**  
*Chem. Descrip.:* Polymer-based surfactant  
*Uses:* Surfactant, debubbling/degassing agent for acrylic, polyester, and epoxy powd. coatings  
*Features:* Nonyellowing  
*Properties:* Off-wh. powd.; sp.gr. 1.18; m.p. 125 C; 100% act.; 97% NV  
*Use Level:* 0.5-2%  
*Storage:* Store closed in cool, dry place @ < 35 C
- Powdermate® 570FL [Troy]**  
*Chem. Descrip.:* Amide modified polyether oligomer  
*Uses:* Flow aid, leveling agent for epoxy, acrylic, and polyester powd. coatings  
*Features:* Solv. resist.  
*Properties:* Off-wh. granular solid; sp.gr. 1.07; m.p. 110 C; 100% act.; 98% NV  
*Use Level:* 1-3%  
*Storage:* Store closed in cool, dry place @ < 35 C
- Power-Lube™ [Chem-Trend A/S]**  
*Uses:* Plunger lubricant  
*Properties:* Powd. and pellets
- PP-AB 104 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 5% Precipitated silica in PP-based masterbatch  
*Uses:* Antiblock agent for plastics  
*Use Level:* 1-3%
- PP-AO 27 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 15% Phenolic and 15% phosphite in PP-based masterbatch  
*Uses:* Antioxidant for plastics  
*Use Level:* 0.2-0.4%
- PP-AO 47 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 10% Phenolic in PP-based masterbatch  
*Uses:* Antioxidant for plastics  
*Use Level:* 0.5-3%
- PP-AO 145 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 15% Triazine and 15% Phenolic  
*Uses:* Antioxidant for plastics  
*Use Level:* 0.2-0.4%
- PP-AS 79 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 5% Ethoxylated amine in PP-based masterbatch  
*Uses:* Antistat for plastics  
*Use Level:* 2-3%
- PP-AS 251 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 50% polymeric antistatic  
*Uses:* Antistat for plastics  
*Use Level:* 8-20%
- PPE 159 [Lakeland Labs Ltd]**  
*Chem. Descrip.:* Phosphated phenol ethoxylate  
 CAS 39464-64-7  
 UN 1760  
*Uses:* Wetting agent, solubilizer, hydrotrope, emulsifier for detergents, maintenance chems., textiles, vehicle cleaning, lubricants, emulsion polymerization  
*Features:* Highly alkali-stable; free-rinsing; hard water-stable; load-carrying  
*Properties:* Amber cl. visc. liq.; acid no. 100; pH 2-3; 100% act.  
*Precaution:* Corrosive
- PP-FR 239 [Constab Additive Polymers Ltd]**  
*Chem. Descrip.:* 30% FR HALS  
*Uses:* Flame retardant for polymers  
*Use Level:* 1.5-3.5%

- PPG 1000 [Huntsman]**  
*Chem. Descrip.:* PPG 1000  
*Uses:* Intermediate for surfactants, ethers, esters; antifoam for ceramics, rubber; hydraulic brake fluids; dyeing; metalworking lubricants; plasticizer for plastics; latex coagulant; textile lubricant  
*Properties:* APHA 100 color; sol. in polar org. solvs.; sp.gr. 1.006; visc. 196 cps; hyd. no. 106-118; pour pt. -36 C; flash pt. (OC) 227 C; ref. index 1.448; surf. tens. 31.3 dynes/cm; 99% act.  
*Environmental:* Biodeg.
- PPG-1025 [Bayer AG]**  
*Chem. Descrip.:* Polypropylene glycol  
 CAS 25322-69-4  
*Uses:* Used in coatings, adhesives, caulks, sealants elastomers, potting compds., tire fill, humectants, defoamers, inks, lubrication, metalworking, antistatic agents, crude oil de-emulsification and plasticizers; food pkg. adhesives, coatings, cellophane, animal glues; defoamer in food-contact coatings, paper/paperboard  
*Regulatory:* FDA 21CFR §173.310, 175.105, 175.300, 176.170, 176.180, 176.200, 176.210, 177.1200, 177.1400, 177.1680, 178.3120  
*Properties:* Pt-Co 75 max. color; m.w. 1000; sp.gr. 1.005 (20/20 C); dens. 8.39 lb/gal (60 F); visc. 220 cp (20 C); acid no. 0/05 max.; flash pt. (PMCC) 356 F; pH 5.0-6.0 (in 10/6 IPA/water); 0.05% max. water  
*Storage:* Store in carbon steel tanks, recommend a heated tank if stored outside, temp. of stored material should not exceed 120 F
- PPG 1650 [Huntsman]**  
*Chem. Descrip.:* PPG 1650  
*Uses:* Intermediate for mfg. of surfactants, ethers, esters; antifoam for ceramics, rubber; lubricant, softener for leather; metalworking lubricants; demulsifier for petrol. industry; plasticizer for plastics; solvent for cosmetics  
*Properties:* Sol. in polar org. solvs.; sp.gr. 1.006; visc. 330 cps; hyd. no. 67-71; pour pt. -32 C; flash pt. (OC) 230 C; ref. index 1.449; pH 5-8 (1% aq. disp.); surf. tens. 31.8 dynes/cm; 99% act.  
*Environmental:* Biodeg.
- PPG-2025 [Bayer AG]**  
*Chem. Descrip.:* Polypropylene glycol  
 CAS 25322-69-4  
*Uses:* Used in deck coatings, adhesives, plywood patch, flooring, elastomers, clay pipe sealants, tire fill, humectants, defoamers, inks, lubrication, metalworking, antistatic agents, crude oil de-emulsification and plasticizers; food pkg. adhesives, coatings, cellophane, animal glues; defoamer in food-contact coatings, paper/paperboard  
*Regulatory:* FDA 21CFR §173.310, 173.340, 175.105, 175.300, 176.170, 176.180, 176.200, 176.210, 177.1200, 177.1400, 177.1680, 178.3120, 178.3740  
*Properties:* Pt-Co 30 color (50 C); m.w. 2000; sp.gr. 1.005 (20/20 C); dens. 8.39 lb/gal (60 F); visc. 520 cps (20 C); acid no. 0.05 max.; hyd. no. 56; flash pt. (PMCC) 341 F; pH 5.0-6.0 (in 10/6 IPA/water); 0.05% max. water  
*Storage:* Store in carbon steel tanks, recommend a heated tank if stored outside, temp. of stored material should not exceed 120 F
- PPG 2250 [Huntsman]**  
*Chem. Descrip.:* PPG 2250  
*Uses:* Intermediate for mfg. of surfactants, ethers, esters; hydraulic brake fluids; cosmetics; dyeing; lubricant, softener for leather; metalworking lubricant; demulsifier for petrol.; latex coagulant; rubber release agent; solvent for veg. oils  
*Properties:* APHA 50 color; sol. in polar org. solvs.; sp.gr. 1.005; visc. 482 cps; hyd. no. 47-54; pour pt. -29 C; flash pt. (OC) 240 C; ref. index 1.449; pH 4.0-7.5 (10% in aq. methanol); surf. tens. 32.1 dynes/cm; 99% act.  
*Environmental:* Biodeg.
- PPG-3025 [Bayer AG]**  
*Chem. Descrip.:* Polypropylene glycol  
 CAS 25322-69-4  
*Uses:* Used in caulks, sealants, deck and sports coatings, deck and sports flooring, inks, lubrication, metalworking, antistatic agents, crude oil de-emulsification; in adhesives for food pkg.; food pkg. adhesives, paper/paperboard, cellophane; defoamer in food-contact coatings  
*Regulatory:* FDA 21CFR §173.310, 175.105, 176.170, 176.180, 176.200, 177.1200, 177.1400, 177.1680, 178.3740  
*Properties:* Pt-Co 50 max. color; m.w. approx. 3000; sp.gr. 1.004 (20/20 C); dens. 8.38 lb/gal (60 F); visc. 1720 cp (20 C); acid no. 0.05 max.; flash pt. (PMCC) 346 F; pH 5.0-6.0 (in 10/6 IPA/water); 0.05% max. water

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| <p><i>Storage:</i> Store in carbon steel tanks, recommend a heated tank if stored outside, temp. of stored material should not exceed 120 F</p> <p>PPG 4000 [Huntsman]<br/> <i>Chem. Descrip.:</i> PPG 4000<br/> <i>Uses:</i> Intermediate for surfactants, ethers, esters; cosmetics; lubricant, softener for leather; metalworking lubricants; demulsifier for petrol. industry; mold release for rubber<br/> <i>Properties:</i> APHA 250 color; sol. in polar org. solvs.; sp.gr. 1.004; visc. 1232 cps; hyd. no. 26-30; pour pt. -30 C; flash pt. (OC) 240 C; ref. index 1.450; pH 5-8 (10% in aq. methanol); surf. tens. 32.2 dynes/cm; 99% act.<br/> <i>Environmental:</i> Biodeg.</p> <p>PP-SA 46 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 4% Erucamide and 4% precipitated silica in PP-based masterbatch<br/> <i>Uses:</i> Slip/antiblock agent for plastics<br/> <i>Use Level:</i> 1-3%</p> <p>PP-SA 97 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 4% Erucamide and 7.5% precipitated silica in PP-based masterbatch<br/> <i>Uses:</i> Slip/antiblock agent for plastics<br/> <i>Use Level:</i> 1-3%</p> <p>PP-SA 128 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 5% Erucamide and 7.5% precipitated silica in PP-based masterbatch<br/> <i>Uses:</i> Slip/antiblock agent for plastics<br/> <i>Use Level:</i> 1-3%</p> <p>PP-SL 82 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 16% Erucamide in PP-based masterbatch<br/> <i>Uses:</i> Slip agent for plastics<br/> <i>Use Level:</i> 0.25-1%</p> <p>PP-SL 98 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 7.5% Erucamide in PP-based masterbatch<br/> <i>Uses:</i> Slip agent for plastics<br/> <i>Use Level:</i> 0.5-2%</p> <p>PP-SL 101 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 4% Erucamide in PP-based masterbatch<br/> <i>Uses:</i> Slip agent for plastics<br/> <i>Use Level:</i> 1-3%</p> <p>PP-SL 242 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% Erucamide<br/> <i>Uses:</i> Slip, mold release agent for plastics<br/> <i>Use Level:</i> 0.4-2%</p> <p>PP-UF 227 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 5% organotin preparation<br/> <i>Uses:</i> Antimicrobial for plastics<br/> <i>Use Level:</i> 3-6%</p> <p>PP-UF 249 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% Triclosan<br/> <i>Uses:</i> Antimicrobial for plastics<br/> <i>Use Level:</i> 0.5-3%</p> <p>PP-UF 254 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 7.5% organotin preparation<br/> <i>Uses:</i> Antimicrobial for plastics<br/> <i>Use Level:</i> 2-4%</p> <p>PP-UF 256 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% Triclosan<br/> <i>Uses:</i> Antimicrobial for plastics<br/> <i>Use Level:</i> 0.5-1.5%</p> <p>PP-UV 38 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS I in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.5-1.5%</p> <p>PP-UV 52 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 25% HALS II and 25% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.5-1%</p> <p>PP-UV 53 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS IV in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1-1.5%</p> <p>PP-UV 54 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS II in PP-based masterbatch</p> | <p><i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1-2%</p> <p>PP-UV 61 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1-1.5%</p> <p>PP-UV 62 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS I in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1-3%</p> <p>PP-UV 63 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS II in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 2-4%</p> <p>PP-UV 64 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 2-3%</p> <p>PP-UV 66 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS II and 10% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1-1.5%</p> <p>PP-UV 75 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS I and 10% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.8-1.5%</p> <p>PP-UV 77 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 50% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.5-1%</p> <p>PP-UV 87 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS IV in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 2-3%</p> <p>PP-UV 88 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 50% HALS IV in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.5-1%</p> <p>PP-UV 113 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS I and 20% HALS III in PP-based masterbatch<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.25-0.75%</p> <p>PP-UV 121 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% benzotriazole<br/> <i>Uses:</i> UV absorber for plastics<br/> <i>Use Level:</i> 1-2%</p> <p>PP-UV 199 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 10% HALS VI<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 3-4%</p> <p>PP-UV 244 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS V<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1.0-1.5%</p> <p>PP-UV 245 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 50% HALS V<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 0.5-1.0%</p> <p>PP-UV 250 [Constab Additive Polymers Ltd]<br/> <i>Chem. Descrip.:</i> 20% HALS VI<br/> <i>Uses:</i> UV stabilizer for plastics<br/> <i>Use Level:</i> 1.5-2%</p> <p>Prespersion PAC-2451 [Flow Polymers]<br/> <i>Chem. Descrip.:</i> 80% Agerite® HP-S (p,p'-Diocetyl-diphenylamine; N,N'-Diphenyl-p-phenylenediamine) in petrol. oil<br/> <i>Uses:</i> Antioxidant disp.<br/> <i>Properties:</i> Paste</p> <p>Preventol® A 3 [Bayer AG]<br/> <i>Chem. Descrip.:</i> Fluorofolpet (phthalimide deriv.) (96% min.), tech. grade<br/> CAS 719-96-0</p> |
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- Toxicology:** TSCA listed
- Suzorite 325-HK** [Zemex Ind. Mins.]  
*Chem. Descrip.:* Mica, delaminated pure phlogopite  
 CAS 12001-26-2; EINECS/ELINCS 310-127-6  
*Uses:* Reinforcing agent, strengthener, stiffener for polymers; reduces warping, shrinking of finished parts; sound absorbent for coatings and polymers; reduces permeability, reduces cracking, improves chem. resist. in industrial coatings  
*Features:* High thermal stability; very low loss on ignition even at 1000 C; inert; high thermal conductivity; low microwave absorp.; exc. mech./elec. props.  
*Regulatory:* FDA 21CFR §175.105, 175.300, 177.1520b, 177.2600, 178.3297; Canada DSL listed  
*Properties:* 21 µ median particle size; 92% -325 mesh; sp.gr. 2.73; bulk dens. 13.5 lb/ft<sup>3</sup>; ref. index 1.58; pH 9.2; hardness (Mohs) 3
- Suzorite 325-S** [Zemex Ind. Mins.]  
*Chem. Descrip.:* Mica, highly delaminated pure phlogopite  
 CAS 12001-26-2; EINECS/ELINCS 310-127-6  
*Uses:* In sound deadening applics.; increases str./stiffness, improves chem./UV resist. in polyolefins; asbestos substitute for insulation props. in spray-on construction coatings; adds modulus before curing and reduces noise/vibration in friction applics.  
*Features:* High thermal stability; very low loss on ignition even at 1000 C; inert; high thermal conductivity; low microwave absorp.; exc. mech./elec. props.; barrier props.  
*Regulatory:* FDA 21CFR §175.105, 175.300, 177.1520b, 177.2600, 178.3297; Canada DSL listed  
*Properties:* Platy flake; 26 µ median particle size; 85% -325 mesh; sp.gr. 2.73; bulk dens. 14 lb/ft<sup>3</sup>; ref. index 1.58; pH 9.2; hardness (Mohs) 3  
*Toxicology:* TSCA listed
- Swanee Clay** [R.E. Carroll]  
*Chem. Descrip.:* Kaolin (soft) clay, hydrated aluminum silicate  
*Uses:* Reinforcing agent, inert filler for NR, SR, latexes; inc. stiffness and hardness  
*Properties:* Off-wh. powd.; odorless; 99.5% through 325 mesh; sp.gr. 2.6; pH 4.5-5.5  
*Toxicology:* Nontoxic
- S-Wax-1** [Cardinal]  
*Chem. Descrip.:* Calcium stearate-paraffin wax blend  
*Uses:* Internal/external lubricant for PVC extrusions, multiscrew inj. molding  
*Properties:* Solid
- S-Wax-3** [Cardinal]  
*Chem. Descrip.:* Calcium stearate-paraffin wax blend  
*Uses:* Internal/external lubricant for rigid PVC, single-screw and multiscrew extrusions and inj. molding  
*Features:* General-purpose; no typ. dusting problems  
*Regulatory:* NSF approved  
*Properties:* Solid; 50% calcium stearate
- SY-AB 70** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* Antiblock additive in K-Resin®-based masterbatch  
*Uses:* Antiblock for plastics  
*Use Level:* 1-3%
- SY-AO 68** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* Antioxidant blend in K-Resin®-based masterbatch  
*Uses:* Antioxidant for plastics  
*Use Level:* 1-2%
- SY-AO 80** [Constab Additive Polymers Ltd]  
*Uses:* Antioxidant for plastics  
*Use Level:* 1-1.5%
- SY-AO 136** [Constab Additive Polymers Ltd]  
*Uses:* Antioxidant for plastics  
*Use Level:* 1-2%
- SY-AS 140** [Constab Additive Polymers Ltd]  
*Chem. Descrip.:* Antistatic system in K-Resin®-based masterbatch  
*Uses:* Antistat for plastics  
*Use Level:* 1-4%
- SY-AS 213** [Constab Additive Polymers Ltd]  
*Uses:* Antistat for plastics  
*Use Level:* 2-5%

- SY-AS 252** [Constab Additive Polymers Ltd]  
*Uses:* Antistat for plastics  
*Use Level:* 8-20%
- Sylfat® DFA** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* For metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Properties:* Gardner 8; sp.gr. 0.91; visc. 20 cps; acid no. 190; iodine no. 135; sapon. no. 197; flash pt. (OC) 204 C
- Sylfat® EPG** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* Surfactant for metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Features:* Epoxy grade  
*Properties:* Gardner 1+; sp.gr. 0.897; dens. 7.45 lb/gal; visc. 20 cps; acid no. 199; iodine no. 130; sapon. no. 200; flash pt. (OC) 204 C; 99.0% fatty acids
- Sylfat® FA-1** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* Surfactant for metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Properties:* Gardner 5; sp.gr. 0.906; dens. 7.53 lb/gal; visc. 20 cps; acid no. 194; iodine no. 131; sapon. no. 197; flash pt. (OC) 204 C; 92.8% fatty acids
- Sylfat® FA-1 Special** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* Surfactant for metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Properties:* Gardner 4+; sp.gr. 0.91; dens. 7.50 lb/gal; visc. 20 cps; acid no. 195; iodine no. 131; sapon. no. 198; flash pt. (OC) 204 C; 95.2% fatty acids
- Sylfat® FA-2** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* Surfactant for metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Properties:* Gardner 3+; sp.gr. 0.898; dens. 7.47 lb/gal; visc. 20 cps; acid no. 197; iodine no. 130; sapon. no. 199; flash pt. (OC) 204 C; 97.8% fatty acids
- Sylfat® FA-3** [Arizona; Eastech]  
*Chem. Descrip.:* Tall oil acid  
 CAS 61790-12-3; EINECS/ELINCS 263-107-3  
*Uses:* Surfactant for metalworking fluids, lubricant additives, oil field chems., asphalt emulsifiers, alkyd resins, industrial/household cleaners, plasticizers, textile drawing lubricants, surf. coatings, rubber prods.  
*Properties:* Gardner 2+; sp.gr. 0.897; dens. 7.45 lb/gal; visc. 20 cps; acid no. 198; iodine no. 130; sapon. no. 200; flash pt. (OC) 204 C; 98.8% fatty acids
- Sylophobic** [Fuji Silysia]  
*Chem. Descrip.:* Syn. amorphous silica treated to be hydrophobic on surface; based on Sylsilia grades  
 CAS 112926-00-8; EINECS/ELINCS 231-545-4  
*Uses:* Water resist. aid, weather resist. aid, chem. resist. aid in paints; anti-blocking agent in plastics; adhesion promoter, water resist. aid in adhesives; antibleeding agent, thickener for inks and papers for printing; also for cosmetics
- Sylvaros® 80** [Arizona]  
*Chem. Descrip.:* Tall oil rosin  
 CAS 8050-09-7; EINECS/ELINCS 232-475-7  
*Uses:* Printing ink binder as resin or salt, paper sizing agent, emulsifier for SBR polymerization as soap, tackifier resin in adhesives, imidazoline