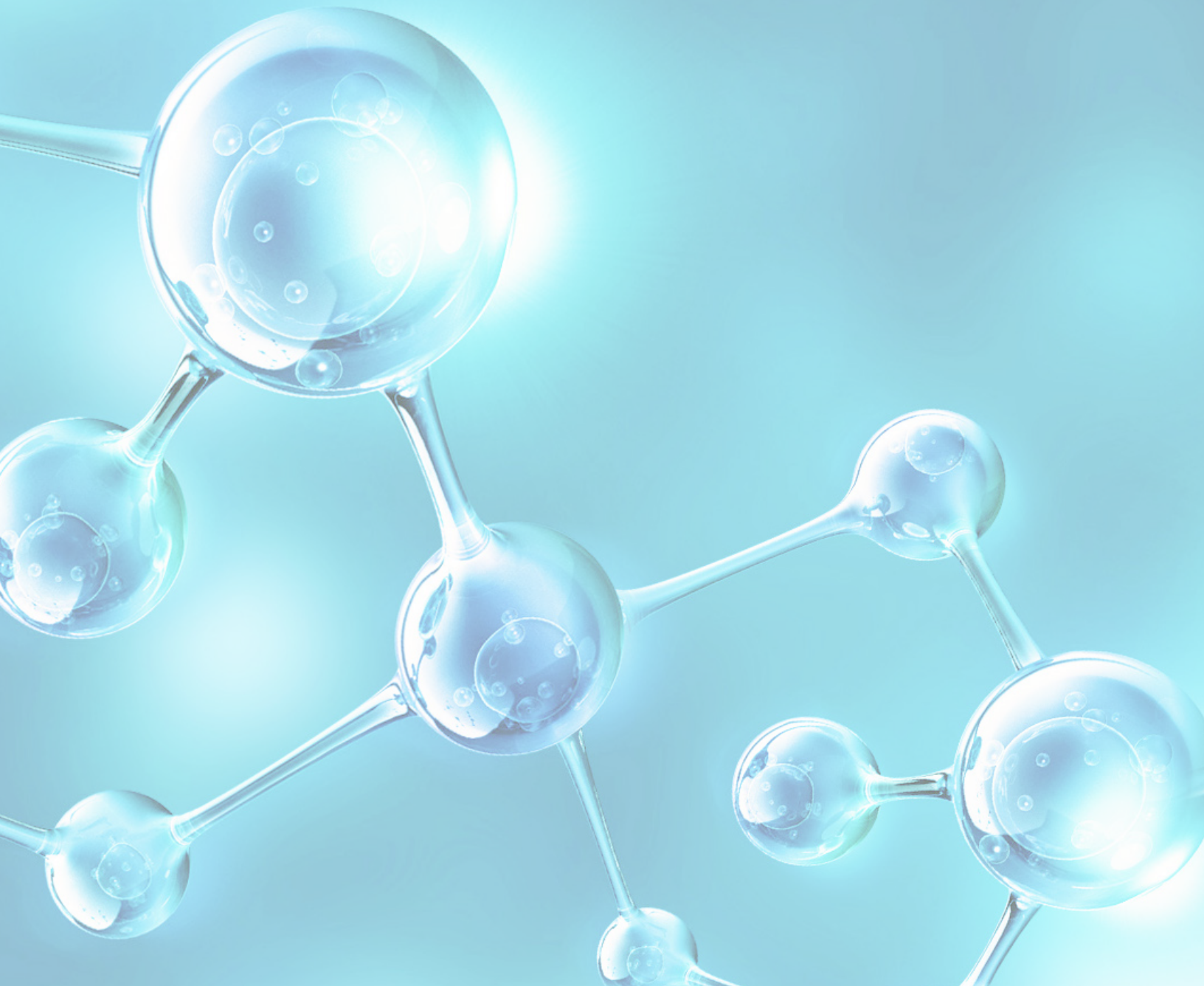




Coating Resins Oils





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Production Sites



Polynt Composites Canada, Inc.
Brampton (ON) - Drummondville (QC)

Polynt Composites USA Inc.
Carpentersville (IL) - Chatham (VA) -
Ennis (TX) - Forest Park (GA) - Houston (TX)
- Marshall (TX) - North Kansas City (MO)
- Orlando (FL) - Sandusky (OH)

Polynt Reichhold Group

After the merger on May 2017 the new Polynt-Reichhold Group is a global Company in the Intermediates, Coating and Composite Resins, Thermoset Compounds, Gel-coats and niche Specialties.

This combination enhances the Group's leading position as a global vertically integrated specialty chemicals player, with significant global presence in Europe, North America and Asia, a strategy initiated by Polynt with the successful integration of PCCR and CCP in the last years and now further reinforced by Reichhold's global scale, extensive product portfolio and R&D competencies.

Polynt-Reichhold Group is known for its superior quality and impressive range of products and with its excellent distribution network it can provide first-class service to customers whatever their market. Customer Service and Technical Service teams are renowned for their customer focus, offering the best service even after products have left manufacturing.

The Group strives to keep customers satisfied, assisting them in producing premium quality products every time they use its products.

Product innovation is important for the Group's business and it's the reason for which it constantly works with customers to find solutions to problems.

Introducing new or improved products ensures that Polynt-Reichhold Group continue not only to deliver what the market wants and needs, but also when it is wanted and needed.

Solvents – Abbreviations

| | |
|---------------------|---|
| A100, S | Aromatic 100 |
| A150, R | Aromatic 150 |
| DGBE, G5 | Diethylene Glycol n-Butyl Ether |
| DMC | Dimethyl Carbonate |
| DPDME, G8 | Dipropylene Glycol Dimethyl Ether |
| DPM | Dipropylene Glycol Monomethyl Ether |
| EEP, A7 | Ethyl 3-Ethoxypropionate |
| EGBE, G4 | Ethylene Glycol Monobutyl Ether, Butyl Cellosolve |
| EGPE, EP, G6 | Ethylene Glycol Monopropyl Ether |
| EtOAc | Ethyl Acetate |
| EtOH, E | Ethyl Alcohol |
| G | Glycol and Glycol Ether |
| i-BuOH, B1 | Isobutyl Alcohol |
| IBIB | Isobutyl Isobutyrate |
| IPA, D | Isopropyl Alcohol |
| Isopar G | Isoparaffin Solvent |
| LAMS, ML | Low Aromatic Mineral Spirits |
| MAK, K4 | Methyl Amyl Ketone |
| MEK, K1 | Methyl Ethyl Ketone |
| MIBK, K2 | Methyl Isobutyl Ketone |
| MO | Odorless Mineral Spirits |
| MPK, K3 | Methyl Propyl Ketone |

| | |
|--------------------|---|
| MS, M | Mineral Spirits |
| n-BuAc, A4 | n-Butyl Acetate |
| n-BuOH, B | n-Butyl Alcohol |
| n-PrOH | n-Propyl Alcohol |
| NMP, MP | n-Methyl-2-Pyrrolidone |
| PCBTF, E1 | para-Chlorobenzotrifluoride (Oxsol® 100) |
| PGME, G3 | Propylene Glycol Monomethyl Ether |
| PMA, A6 | Propylene Glycol Monomethyl Ether Acetate |
| PnP, G2 | Propoxy Propanol |
| s-BuOH, B2 | Secondary Butyl Alcohol |
| t-BuAc, E2 | t-Butyl Acetate |
| T | Toluene |
| TEA | Triethyleneamine |
| DMEA | Dimethyl Ethanol Amine |
| NH3 | Ammonia |
| TPM, T8 | Tripropylene Glycol Monomethyl Ether |
| VM&P, V | VM&P Naphtha |
| VMS, E3 | Volatile Methylsiloxane |
| W | Water |
| X | Xylene |
| Z | Mixed Solvents |
| 6X3 | Rule 66 |

Definitions

| | |
|----------------------------|---|
| % NVM | Nonvolatile material expressed as a percent of the total weight of the resin solution. |
| % NVV | Nonvolatile material expressed as a percent of the total volume of the resin solution. |
| Eq. Wt. | Molecular weight divided by functionality, the latter being the number of a given reactive group present on an average molecule of the material. Expressed based on a solids basis. |
| pH | Degree of acidity or alkalinity of a solution expressed on a relative scale of 1 to 14 with 7 being neutral. |
| Particle Size | Average diameter of a distribution of particles, usually expressed in microns or nanometers. |
| Tg | Temperature at which the non-crystalline portion of a polymer is transformed from a viscous rubbery state to a brittle glass-like material. Generally an indication of the flexibility and hardness of a finished paint film. |
| MFFT | Minimum temperature at which an applied coating forms a continuous film, as evidenced by the visual lack of cracking or powdery appearance of film and film integrity, by testing the film on a temperature gradient plate. |
| Oil Type | Synthetic or naturally occurring vegetable material that contributes fatty acids used in producing alkyd resins. |
| Wt/Gal | Mass per volume of polymer as supplied expressed in pounds per gallon. |
| Viscosity | Measurement of a polymer's resistance to flow expressed in Gardner-Holdt units or centipoises. |
| Reduced Viscosity | Measured viscosity (as defined previously) at a specified percent weight solids typically lower than the solids of the polymer as supplied. |
| Color | Measurement of the light reflectance of a polymer in liquid form expressed in Gardner units on a relative scale of 1 to 14 with 1 being water white. |
| Acid Value (solids) | Number of milligrams of KOH required to neutralize the free acids in one gram of polymer solids. |
| OH Value | Hydroxyl value – number of milligrams of KOH equivalent to the hydroxyl groups available per gram of polymer. The hydroxyl equivalent weight is given by 56,100 divided by the hydroxyl value. |
| Solvents | Dilution solvents used to achieve the desired viscosity. |

Trademarked Brands

| | |
|---|---|
| ACRYLAMAC®, AROLON® | Solution Acrylics |
| ALCURE® | Polymeric Isocyanate Curatives |
| AQUAMAC®, AROLON®, SYNTHEMUL® | All Acrylic, Self-Crosslinking, Styrene Acrylic, and Vinyl Acrylic Latex |
| ARCHEMIS® | High Solids Long Oil Alkyds |
| AROFLINT® | Non-Isocyanate 2K Systems |
| BECKOSOL AQ® | Alkyd Emulsions |
| CARBAMAC®, UROTUF® | Oil Modified Urethanes, Uralkyds, Moisture Cure Urethanes, and Polyurethane Dispersions |
| CHEMACOIL® | Conventional Vinyl Oxazoline-Modified Esters |
| DURAMAC®, BECKOSOL® | Alkyds, Flat Alkyds, and Thixotropic Alkyds |
| DURAMAC®, KELSOL® | Water-Reducible Alkyds |
| HYDREAU® | Polyester Dispersions |
| MACOPOL®, AMBERLAC® | Copolymer Resins |
| POLYMAC®, FINE-CLAD®, FINE-TONE® | Powder Polyesters |
| POLYMAC®, AROPLAZ® | Liquid Polyesters |
| EPOTUF® | Epoxy Resins, Epoxy Curing Agents |
| REZIMAC®, EPOTUF® | Epoxy Esters |
| REZIMAC®, BECKOSOL® | Silicone-Modified and Phenolic-Modified Alkyds |

Oils

| <i>PRODUCT</i> | <i>% SOLIDS (WEIGHT)</i> | <i>% SOLIDS (VOLUME)</i> | <i>DENSITY (LBS/GAL)</i> | <i>SOLVENTS</i> | <i>VISCOSITY (G - H)</i> | <i>GARDNER COLOR (MAXIMUM)</i> |
|--------------------------|------------------------------|------------------------------|------------------------------|-----------------|------------------------------|------------------------------------|
| LONG OIL | | | | | | |
| ADMEROL® 75-M-70 | 70 | — | 7.61 | MS | S - V | 11 |
| ADMEROL® 351-M-70 | 70 | — | 7.80 | MS | Z - Z ₂ | 13 |
| ESSKOL® Y - Z | 100 | — | 8.11 | — | Y - Z | 8 |



| 8 | Flexible dicyclopentadiene linseed copolymer which meets the requirements for many state aluminum paint specs and for Federal Specification TT-V-81f Aluminum Vehicle and TT-V-121g Spar varnish. |
|----|---|
| 2 | Dicyclopentadiene soya copolymer for metallic finishes, floor paint, varnishes and sealers |
| 17 | Linseed OIL-MODIFIED with maleic anhydride to improve dry time. |

Glossary

| | |
|---------------------------------------|---|
| Abrasion | Wearing away of a surface in service by action such as rubbing, scraping or erosion. |
| Abrasion Resistance | The ability of a coating to resist being worn away and to maintain its original appearance and structure when subjected to rubbing, scraping or erosion. |
| Acid Number or Value | The number of milligrams of KOH required to neutralize the free acids in 1 gram of polymer. |
| Aftertack | Film defect in which the coated surface, having once reached a tack-free stage, subsequently develops a sticky condition. |
| Anti-sintering | The property of reducing sintering. |
| Architectural Coatings | Coatings intended for on-site application to interior or exterior surfaces of residential, commercial, institutional or industrial buildings – as opposed to industrial coatings. Protective and decorative finishes applied at ambient temperatures. |
| Baking | The process of drying or curing a coating by the application of heat in excess of 65°C / 150°F. When below this temperature, the process is referred to as forced drying. |
| Block Resistance | Resistance to the undesirable sticking together of two painted surfaces when pressed together under normal conditions or under specified conditions of temperature, pressure, and relative humidity. |
| Blocked Isocyanate | An isocyanate material in which the isocyanate groups (NCO) are blocked from carrying out their normal chemical reactions by already having been reacted, either with a specific blocking agent or with themselves. In the latter case the blocked isocyanate is referred to as a uretdione type, because the NCO groups have linked themselves together to produce uretdione linkages. Common blocking agents are ϵ -caprolactam and triazole. |
| Blocking Agent | A chemical, such as ϵ -caprolactam, that reacts reversibly with isocyanate groups (NCO) such that at temperatures below the deblocking temperature it is covalently bonded to the NCO groups, thereby preventing these groups from reacting with anything else. At temperatures above the deblocking temperature, the blocking agent is released from the NCO groups thus allowing them to react with, for example, the hydroxyl groups of the surrounding polyester resin. |
| Blush, Blushing, “Bloom” | Film defect which appears as a milky opalescence as the film dries; can be a temporary or permanent condition. It is generally caused by rapid evaporation, moisture, or incompatibility. |
| Brush Drag | Resistance encountered when applying a coating by brush. |
| Brushability | The ability or ease with which a coating can be brushed. |
| Catalyst | An additive that speeds up a chemical reaction, such as curing, but takes no part in the reaction. |
| Chalk Resistance | The ability of a coating to resist the formation of a friable powder on the surface of its film caused by the disintegration of the binding medium due to degradative weather factors. |
| Chip Resistance | The ability of a coating or layers of coatings to resist total or partial removal, usually in small pieces, as a result of impact by hard objects or from wear during service. |
| Compatibility | Capacity of coatings from either different sources or of different compositions to be combined and applied so as to yield no visible or mechanically measurable differences in the cured film or application properties. |
| Conventional Solids | For the purposes of this reference guide, any material that is less than 70% solids. There may be exceptions. |
| Copolymer | A polymer consisting of molecules containing large numbers of units of two or more chemically different types in irregular sequence. |
| Corrosion Resistance | The ability of a substance to resist deterioration because of reaction with its environment. |
| Cracking | Generally, the splitting of a dry paint or varnish film, usually as a result of aging or flexing. |
| Crosslinking | Applied to polymer molecules, the setting up of chemical links between the molecular chains to form a three-dimensional or network polymer generally by covalent bonding. Crosslinking generally toughens and stiffens coatings. Thermosetting materials crosslink under the influence of heat and catalysis and, in some cases, electromagnetic radiation. |
| Cure | To change the properties of a polymeric system by chemical reaction into a final, more stable, usable condition by the use of heat, radiation or reaction with chemical additives. |
| D.O.I. (Distinctness of Image) | The sharpness with which image outlines are reflected by the surface of an object. |
| DCO | Dehydrated Castor Oil |
| Deblocking Temperature | The temperature at which the thermally reversible reaction between a blocking agent and an isocyanate group (NCO) begins to produce significant quantities of freed NCO groups available for reaction. The higher the temperature a blocked isocyanate is above its deblocking temperature, the more NCO groups are made available, and the faster crosslinking reactions can be. Conversely, when an isocyanate is below its deblocking temperature, no NCO groups are available for reaction. |

Glossary

| | |
|---|--|
| DFT | Dry film thickness |
| Dry | A film is considered dry when using moderate pressure, it feels firm to the touch. |
| Dry-Through | Film is considered dry-through when no distortion of the film (i.e., loosening, detachment, wrinkling, etc.) occurs when the thumb is borne downward while simultaneously turning the thumb through an angle of 90° in the plane of the film. |
| Dry-to-Touch | A film is considered dry-to-touch when it no longer adheres to the finger. The finger leaves no marks after touching the film, and film does not rub up appreciably when finger is lightly rubbed across the surface. |
| DTM (Direct-to-Metal) | Refers to coatings applied directly to an uncoated, non-primed metal substrate. |
| Edge Coverage | A powder coating's ability to flow over, build and adhere to sharp corners, angles and edges. |
| Enamel | Topcoat that is characterized by its ability to form a smooth surface; originally associated with a high gloss but may also include lower degrees of gloss. |
| Equivalent Weight | The equivalent weight of a material is its molecular weight divided by its functionality, the latter being the number of a given reactive group present on an average molecule of the material. For polyester resins for coating powders, the resin equivalent weight is given by 56,100 divided by the resin acid value (for carboxyl polyesters) or 56,100 divided by the resin hydroxyl value (for hydroxyl polyesters). Expressed based on a solids basis. |
| Exempt Solvent | Any solvent that has not been declared photochemical reactive by any of several regulatory agencies. |
| Extruder | A device used to melt-mix plastics and/or powder coatings. An extruder utilizes heat and mechanical kneading to achieve a homogeneous mixture. |
| FDA | Food and Drug Administration |
| Flash Point | Lowest temperature of a liquid at which it gives off sufficient vapor to form an ignitable mixture with the air near the surface of the liquid or within the vessel used. |
| Glass Transition Temperature (T_g) | The temperature at which materials in general change from either a hard glassy state to a softer, rubbery state, or from a soft rubbery state to a harder glassy state. |
| HAP | Hazardous Air Pollutant |
| High Drink | A resin is said to be high drink when, as solvent is added, there is a slow viscosity reduction, enabling lower solids at a given viscosity. |
| High Solids | For the purposes of this reference guide, any material that is 70% solids or higher. There may be exceptions. |
| HDODA | Hexanediol diacrylate |
| HQMME | Hydroquinone monomethyl ether |
| Hybrid Powder Coating | A powder coating whose binder component is a blend of two different resins, such as polyester and epoxy. A "60/40" polyester/epoxy hybrid for example, would have a resin component comprising 60 wt% polyester and 40 wt% epoxy. The functional groups on each resin are balanced so as to fully react with each other at the given wt% ratios of each resin. |
| Impact Fusion | The tendency for particles of powder coatings to agglomerate, fuse together, or build up on surfaces, because of mechanical impact during transportation within the powder application equipment. |
| Inhibitor | A negative catalyst which prevents or retards an undesirable chemical reaction. |
| Isocyanate | A material containing NCO groups that are available for reaction with a variety of other functional groups. Commonly those used in coating powders are polymeric in nature so as to increase their functionality. |
| Lacquer | Coating composition which is based on synthetic thermoplastic film-forming material dissolved in organic solvent that dries primarily by solvent evaporation. |
| Long Oil Alkyd | Alkyd resin containing more than 60% of oil in solids. |
| Medium Oil Alkyd | Alkyd of medium oil content, usually containing from 40-60% of oil in solids. |
| Melt Mixing | A predominant process for the manufacture of powder coatings involving the continuous compounding of the pigments, fillers, additives, resins and curing agents at elevated temperatures. |
| MFFT (Minimum Film Forming Temperature) | The minimum temperature at which an applied coating forms a continuous film, as evidenced by the visual lack of cracking or powdery appearance of film and film integrity, by testing the film on a temperature gradient plate. |
| Modified Alkyd | Modified alkyds are those in which the polybasic acid is substituted in part by a monobasic acid, of which the vegetable oil fatty acids are typical. |
| Oligomer | A polymer composed of molecules containing only two, three or a few repeating structural units. |

Glossary

| | |
|---|--|
| Particle Size | The average diameter of a distribution of particles, usually expressed in microns or nanometers. |
| PVC (Pigment Volume Concentration) | Ratio of the volume of pigment to the volume of total nonvolatile material (i.e., pigment and binder) present in a coating. |
| Pinholes | Film defect characterized by small pore-like flaws in a coating that extend entirely through the applied film and have the general appearance of pin pricks when viewed by reflective light. |
| Post Cure Embrittlement | A process whereby a cured coating exhibits increasing embrittlement and decreasing impact resistance with age. |
| Pot Life | The length of time a paint material is useful after its original package is opened or after catalyst or other ingredients are added. |
| Powder Coating | Finely divided particles of organic polymer that generally contain pigments, fillers and additives and which remain finely divided during storage under suitable conditions. |
| Precatalyzed | Usually refers to a resin that has a catalyst already added by the resin manufacturer. This ensures complete mixing of the catalyst with the resin and results in a resin that reacts faster than the uncatalyzed material. |
| Primer | The first complete coat of paint of a painting system applied to a surface. |
| Profile | Surface contour of a blast-cleaned or substrate surface, viewed from the edge. |
| Reactive Diluent | A viscosity reducer for coatings that has low volatility and will become a permanent part of the coating through chemical reaction. |
| Sagging | Downward moving of a paint film between the times of application and setting, resulting in an uneven coating having a thick lower edge. |
| Salt Spray Test | Test applied to metal finishes to determine their anticorrosive properties, involving spraying of common salt (sodium chloride) solution on the surface of a coated steel panel. |
| Shelf Life | The period of time for which a material can normally be stored and still be in a usable condition. |
| Short Oil Alkyd | Alkyd resin containing less than 40% oil in solids. |
| Sintering | The tendency of some powder coatings to agglomerate over time, often due to being stored too long at too high a temperature. |
| Skydrol® Resistance | Product is resistant to hydraulic fluid Skydrol. |
| Surface Dry | The premature drying of the surface of a liquid coating film so that the under portion is retarded in drying. |
| Syneresis | The separation of liquid from a gel. |
| Tack-Free | Freedom from tack of a coating after suitable drying time. |
| T-Bend Flexibility Test | Simple method for determining the flexibility of coatings by bending a coated metal test strip over itself. A panel is bent and pressed flat by means of a jig to achieve a 180° bend. |
| Telegraphing | Brush marks or other irregularities in the previous coat or substrate that show through the cured topcoat. |
| T_g | The temperature at which materials in general change from either a hard glassy state to a softer, rubbery state, or from a soft rubbery state to a harder glassy state. |
| TGIC (Triglycidyl Isocyanurate) | A curing agent for powder coating resins containing carboxyl groups. |
| TMA | Trimellitic anhydride |
| Two-Component Paint | A coating that is manufactured in two components that must be maintained separately until shortly before use. |
| Uretdione | A material containing uretdione linkages. These linkages are produced by two NCO groups reacting with each other. The original NCO groups are then no longer available for reaction and are termed "blocked." The reaction is reversible, such that the application of sufficient heat will cause the regeneration of the original NCO groups, which can then react. The advantage of this type of blocking is that there is no release of any blocking agent. |
| VOC (Volatile Organic Compound) | Any organic compound that participates in atmospheric photochemical reactions; that is, any organic compound other than those that the EPA designates as having negligible photochemical reactivity. |
| Weathering | Behavior of paint films when exposed to natural weather or accelerated weathering equipment, characterized by changes in color, texture, strength, chemical composition or other properties. |
| Yellowing | Development of a yellow color on aging. |
| Yellowing Resistance | The resistance a coating has to turning yellow due to, for example, extended cure times at high temperature, or the use of direct gas-fired curing ovens. |

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