



STAN-TONE™ PEP COLORS

- **Description:** Selected organic and inorganic pigments dispersed in a polyester plasticizer.
- **Carrier:** Diethylene glycol adipate, 2,000 molecular wt., 54 hydroxyl number.
- **Product Form:** Liquid to paste (varying viscosity).
- **Application/End Use:** For use in a variety of thermoset polyester systems (polyester resin composites & polyester polyurethane systems) including wheels & industrial rollers, rigid foam, adhesives, laminates, etc.

Typical recommended use level: 1.0% – 5.0% by weight.

- **Standard Packaging:** 5-gallon plastic pail, 30-gallon fiber drum, 55-gallon steel drum.
- **Shelf Life:** Typically one year from the date of manufacture when stored under proper conditions in original, sealed container. Mix prior to use.
- **Order Size/Sample Size:** Minimum order: 5-gallon pail. 1/2-pint sample available upon request.

STAN-TONE CODE	PIGMENT TYPE	APPROX. % PIGMENT	SPECIFIC GRAVITY	COLOR INDEX	LIGHTFASTNESS
WHITE					
10PEP03	Titanium Dioxide, Rutile	60.0	2.06	PW-6	I/O
YELLOW					
12PEP01	Diarylide AAOT GS	20.0	1.24	PY-14	I
12PEP03	Diarylide HR RS	25.0	1.23	PY-83	I/O (Mass)
13PEP02	Isoindolinone RS	25.0	1.31	PY-110	I/O
13PEP03	Benzimidazolone GS	25.0	1.25	PY-151	I/O (Mass)
30PEP01 (a)	Primrose Chrome GS	60.0	2.26	PY-34	I/O C
30PEP03 (a)	Medium Chrome RS	60.0	2.26	PY-34	I/O C
81PEP01	Iron Oxide	60.0	2.07	PY-42	I/O
ORANGE					
15PEP02 (a)	Molybdate RS	65.0	2.41	PR-104	I/O C
15PEP03	Benzimidazolone RS	25.0	1.27	PO-36	I/O
RED					
23PEP04	Quinacridone BS	25.0	1.24	PV-19	I/O
23PEP06	Specialty Naphthol BS	25.0	1.23	PR-170	I/O (Mass) C
25PEP01	Red 2B, Ca Salt BS	17.0	1.26	PR-48:2	I/O (Mass)
28PEP01 (a)	Red 2B, Ba Salt YS	25.0	1.32	PR-48:1	I/O (Mass)
82PEP01	Iron Oxide, Light YS	27.0	1.50	PR-101	I/O
82PEP02	Iron Oxide, Light BS	60.0	2.20	PR-101	I/O
82PEP04	Iron Oxide, Light VYS	60.0	2.20	PR-101	I/O
82PEP05	Iron Oxide, Dark VBS	60.0	2.21	PR-101	I/O

STAN-TONE™ COLOR DISPERSIONS FOR CASTABLE POLYURETHANES

Stan-Tone™ pigment dispersions find broad application in thermoset castable polyurethane systems. Selection of the best pigment dispersion is dependent on a number of factors: the specific urethane system, the fabrication/processing methods, the end-use requirements, the economics, etc.

VEHICLE TYPE

The primary requirement is the selection of the vehicle compatible with the particular urethane system. For our purposes, urethane systems can be categorized into two basic types: polyethers and polyesters. These vehicles fall into the categories of nonreactive and reactive. Most urethane systems are based on two components, typically a “prepolymer” and “polyol.” The nonreactive vehicles can be added to either component. It is recommended that the reactive vehicles be mixed with the polyol portion. Mixing reactive vehicles with the prepolymer should be carefully evaluated and tested on an application-by-application basis, because it could result in shortened pot life and/or inferior physical properties.

POLYESTER-BASED SYSTEMS

Stan-Tone™ PEP colors (diethylene glycol adipate) are reactive and compatible with polyester systems, reacting to become part of the final cured product. In addition to their use in polyester polyurethanes, Stan-Tone™ PEP colorants find use in a variety of thermoset polyester systems for applications such as pultrusion, cast polymer countertops, glass-reinforced composites and coated fabrics. PolyOne offers a custom PEP vehicle system especially suitable for gelcote applications.

POLYETHER-BASED SYSTEMS

Stan-Tone™ ET colors (polyether triol) are reactive and highly compatible with polyether systems reacting to become part of the final cured polymer. Refer to PolyOne’s Stan-Tone™ Polyether Urethane Paste Colors (ET) brochure for further details.

KEY

- RS = RED SHADE
- YS = YELLOW SHADE
- VYS = VERY YELLOW SHADE
- BS = BLUE SHADE
- VBS = VERY BLUE SHADE
- GS = GREEN SHADE
- HR = HEAT-RESISTANT
- (a) = HEAVY METAL PIGMENT

LIGHTFASTNESS

- I = INDOOR ONLY
- I/O = INDOOR OR OUTDOOR
- MASS = OUTDOOR MASSTONE APPLICATION ONLY
- C = SOME CAUTION ADVISED

STAN-TONE CODE	PIGMENT TYPE	APPROX. % PIGMENT	SPECIFIC GRAVITY	COLOR INDEX	LIGHTFASTNESS
BLUE					
40PEP01	Phthalocyanine GS	25.0	1.27	PB-15:3	I/O
40PEP05	Phthalocyanine RS	25.0	1.27	PB-15	I/O
42PEP02	Ultramarine	35.0	1.44	PB-29	I/O
49PEP01	Cobalt	31.0	1.54	PB-28	I/O
GREEN					
50PEP01	Phthalocyanine BS	16.0	1.28	PG-7	I/O
50PEP03	Phthalocyanine YS	16.0	1.28	PG-7	I/O
59PEP02 (a)	Chromium Oxide	70.0	2.60	PG-17	I/O
VIOLET/MAGENTA					
24PEP02	Carbazole Violet	13.0	1.22	PV-23	I/O
24PEP03	Quinacridone Violet	20.0	1.24	PV-19	I/O
24PEP04	Ultramarine Violet	50.0	1.69	PV-15	I/O
24PEP05	Quinacridone Magenta	20.0	1.24	PR-122	I/O
24PEP06	Benzimidazolone	20.0	1.23	PV-32	I/O
BROWN/TAN					
83PEP01	Iron Oxide, Light	34.0	1.60	PBr-6	I/O
83PEP02	Iron Oxide, Dark	29.0	1.51	PBr-6	I/O
BLACK					
90PEP01	Furnace – High Jet	24.0	1.30	PBk-7	I/O
90PEP04	Furnace – Medium	17.0	1.27	PBk-7	I/O
90PEP05	Iron Oxide	33.0	1.58	PBk-11	I/O

Stan-Tone™ DIDP paste colors are compatible with polyether systems but are nonreactive. While the DIDP acts as a diluent in the system, the relatively small amounts (approximately 3% maximum) should have only minor effects on the physical properties in normal situations. Refer to PolyOne's Stan-Tone™ Vinyl Paste Colors (HCC) brochure for further details, and test to verify compatibility and performance.

VISCOSITY RANGE

Stan-Tone™ dispersions can be supplied in a range of viscosities to meet most requirements. Selection of a suitable viscosity is dependent on the particular processing techniques employed by the user. The fabricator who is hand-mixing small batches might prefer a higher viscosity (buttery) paste for ease of weighing and handling. On the other hand, a metering pump/mixing chamber setup would typically use a more pumpable, nonsettling, low-viscosity dispersion. The tendency for a pigment to settle-out increases when the viscosity is lowered; therefore, premixing at the pump is recommended.

PIGMENT TYPE

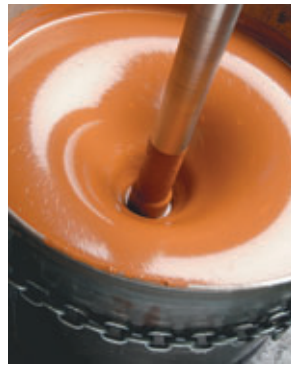
Selection of the pigment type is determined by the end-use requirements, such as indoor or outdoor (lightfastness), toxicity, heat stability, etc.

Urethane systems based on aromatic isocyanates (MDI, TDI) exhibit inherent color-stability problems (darkening and yellowing) due to UV degradation and/or aging. Aliphatic isocyanate systems offer better light stability, but are more prone to react with moisture contamination than the aromatic systems. The type of system being colored will affect the perceived performance of the pigment system over time, and users may wish to perform color-aging tests to verify desired long-term results.

SPECIAL DISPERSIONS

Stan-Tone™ dispersions are also available in a variety of other vehicles including dipropylene glycol dibenzoate, which has the advantage of compatibility in both polyether and polyester systems. Customer-specified carrier systems and custom-color match pigment blends are available on a made-to-order basis.

Specific questions or problem areas can be discussed with your PolyOne Technical Specialist.



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Stan-Tone™ colorants are manufactured at PolyOne's state-of-the-art facility located in Massillon, Ohio. For more information, call 1-866-POLYONE or e-mail us via our Web site at www.polyone.com.



At PolyOne, we deliver premium-quality products and services, which our customers use to enhance their own products. We believe no competitor can match our technical expertise because no workforce can outperform the people of PolyOne. Our people are ONE team working together – our strength and our pride. Their skills, passion and dedication are shaping a potent industry leader, a concerned corporate citizen and a great place to work.

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STPEPB-01-70448