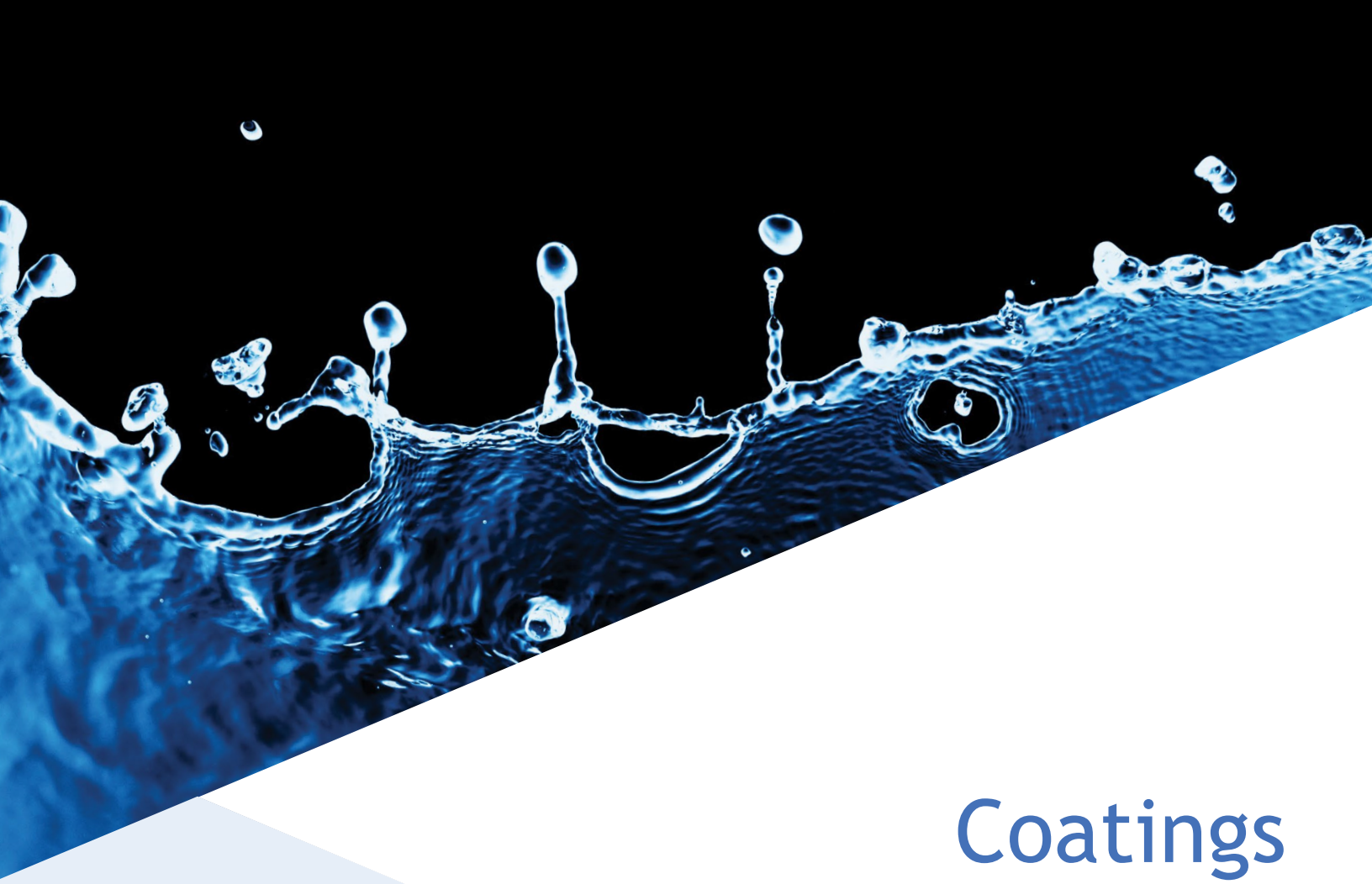
treme
Coating Technologies

High Performance Coatings for Automotive Applications



Coatings

X-Treme, Inc has developed multiple unique and proprietary coatings for the automotive market. The **SRT-Denim Resistant topcoats** meet the General Motors Worldwide and Ford specifications for cleanability and passing both the blue jean and coffee stain tests – while removed with soap and water; flexibility, passing a 400,000 Bally flex test; and abrasion, passing 280,000 Wyzenbeeks.

The **Double Polished Clear Coating** has been on the market for more than 4 years thus far. This coating exhibits excellent optical properties and will not haze, yellow or fog over time. Its high abrasion resistance coupled with its heat and light stability make it well-suited for applications on boats, automobiles and convertible windows.

X-Treme's **PU topcoat** has been on the Toyota dashboard for many years, passing Toyota's proprietary "squeak test," along with all other abrasion, elongation, and light/heat stability tests required. X-Treme's PU topcoat has also been used in the upholstery industry for leather matching. X-Treme also has a "protein" type PU coating with excellent performance in automotive applications.

X-Treme's **PVC, PVC/Acrylic, and PU primer/ barrier coat/correction coats** have been used in automotive applications for 20 years. They provide excellent properties to the finished product, including adhesion, barrier, stretch and light/heat stability. Many of the major USA automotive PVC suppliers have used X-Treme's primers, coatings and solvent-based inks for color correction.

X-Treme also produces a line of **automotive-grade solvent inks**, both as individual colors and in color matches. The same pigments present in X-Treme's automotive-grade plasticized pigment dispersions are used in the solvent inks, thus eliminating metamerism in the finished product. Top of the line QC and color control testing includes a Saueressig laboratory proofer. Please consult X-Treme's brochure on automotive-grade printing inks for further information.

HIGH PERFORMANCE COATINGS

High Performance Primers, Barrier Coats and Topcoats

PRIMERS AND BARRIER COATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1386	Dull Polyurethane Primer	7.5 +/- 0.2	16.0 +/- 2.0	17.0 +/- 2.0 sec #3 Zahn
TUC1396R	Dull TPO Primer	7.5 +/- 0.2	15.0 +/- 2.0	12.0 +/- 2.0 sec #3 Zahn
TUC1397R	Crosslinker for TPO	9.45 +/- 1.0	100	1200 +/- 200 mPA's
TUC 1412	Dull Polyurethane Primer	7.2 +/- 0.2	12.0 +/- 1.0	14.5 +/- 2.0 sec #3 Zahn
TIC1578	Dull PVC Primer for Automotive	7.1 +/- 0.1	12.0 +/- 2.0	14.0 +/- 2.0 sec #3 Zahn
TIC1581	Dull PVC Primer for Automotive Topcoat	7.7 +/- 0.1	12.0 +/- 2.0	14.0 +/- 2.0 sec #3 Zahn
TIC1586	Dull PVC/Acrylic Primer	7.6 +/- 0.2	13.5 +/- 1.5	13.0 +/- 3.0 sec #3 Zahn

WATER-BASE PRIMERS ADHESIVE

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC2003	Water-Based Adhesive for PVC/Polyester	7.8 +/- 2.0	35.0 +/- 3.0	21.0 +/- 2.0 sec #3 Zahn
TUC2004	Crosslinker for Water Base	7.0 +/- 0.2	N/A	8.0 +/- 2.0 sec #3 Zahn

SRT - DENIM STAIN RESISTANT TOPCOATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1387	Crosslinker	7.0 +/- 0.2	N/A	8.0 +/- 2.0 sec #3 Zahn
TUC1388R	Dull SRT-Denim Stain Resistant Topcoat	7.8 +/- 0.2	32 +/- 38	11.0 +/- 3.0 sec #3 Zahn
TUC1389R	Gloss SRT-Denim Stain Resistant Topcoat	7.8 +/- 0.2	32 +/- 38	11.0 +/- 3.0 sec #3 Zahn
TUC1404	Dull Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	32.5 +/- 2.0	13.0 +/- 1.0 sec #3 Zahn
TUC1405	Gloss Pre-Crosslinked SRT Topcoat	7.7 +/- 0.2	33.0 +/- 3.0	11.0 +/- 3.0 sec #3 Zahn
TUC1406	Dull Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	35.5 +/- 2.0	14.0 +/- 2.0 sec #3 Zahn
TUC1407	Gloss Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	33.0 +/- 3.0	11.0 +/- 3.0 sec #3 Zahn
TUC1408	Dull Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	36.0 +/- 2.0	13.5 +/- 2.0 sec #3 Zahn
TUC1409	Gloss Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	32.0 +/- 2.0	12.5 +/- 2.0 sec #3 Zahn
TUC1415	Dull Pre-Crosslinked SRT Topcoat	7.8 +/- 0.2	32.5 +/- 2.0	13.0 +/- 1.0 sec #3 Zahn
TUC1417	Gloss Pre-Crosslinked SRT Topcoat	7.8 +/-0.2	32.5 +/- 2.0	13.0 +/-1.0 sec #3 Zahn

WATER-BASE SRT DENIM STAIN RESISTANT TOPCOATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC2015R	Dull Denim Resistant SRT Topcoat	8.6 +/- 0.1	32.0 +/- 2.0	28.0 +/- 3.0 sec #3 Zahn
TUC2017	Gloss Denim Resistant SRT Topcoat	8.8 +/- 0.2	26.0 +/- 2.0	20.0 +/- 3.0 sec #3 Zahn
TUC2023	Dull High Abrasion Water Base Topcoat	8.6 +/- 0.2	33.0 +/- 2.0	28.0 +/- 3.0 sec #3 Zahn

WATER-BASE PRIMERS AND BARRIER COATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC2022	Dull Water Base Primer for PVC	7.8 +/- 0.2	30.0 +/- 2.0	16.0 +/- 2.0 sec #3 Zahn
TUC2022R	Dull Water Base Primer for TPO	7.7 +/- 0.2	27.0 +/- 2.0	16.0 +/- 3.0 sec #3 Zahn

WATER-BASE NON-BURNISHING TOPCOAT

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC2020	Very Dull Non-Burnishing Topcoat	8.4 +/- 0.2	23.0 +/- 1.0	18.0 +/- 2.0 sec #3 Zahn
TUC2020-1	Dull Non-Burnishing Topcoat	8.4 +/- 0.2	23.0 +/- 1.0	18.0 +/- 2.0 sec #3 Zahn
TUC2024	New Haptics Non-Burnishing PVC Topcoat	8.7 +/- 0.2	34.0 +/- 5.0	16.0 +/- 2.0 sec #3 Zahn
TUC2012	Crosslinker	8.7 +/- 0.2	43.0 +/- 2.0	13.0 +/- 1.0 sec #3 Zahn

High Performance Solvents and Topcoats

SOLVENT NON-BURNISHING

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1398R	Dull PU Topcoat Non-Squeak for PVC & TPO	7.5 +/- 0.2	18.0 +/- 2.0	23.0 +/- 5.0 sec #3 Zahn

AIR DRY SRT TOPCOAT

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1402	Air Dry SRT for Boat Bottom	7.7 +/- 0.2	32.0 +/- 2.0	13.0 +/- 2.0 sec #3 Zahn
TUC1378	Crosslinker	7.0 +/- 0.2	N/A	8.0 +/- 2.0 sec #3 Zahn

ULTRA-CLEAR TOPCOATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1354M2	Ultra-Clear High Abrasion Topcoat	7.7 +/- 0.3	50.0 +/- 2.0	18.0 +/- 2.0 sec #3 Zahn
TUC1338R	Crosslinker	7.0 +/- 0.2	15.0 +/- 2.0	8.0 +/- 2.0 sec #3 Zahn

WATER-BASED METALLIC INK

Product Code	Description	wt/Gal	% Solids	Viscosity
TAM100	Metallic Urethane	7.9 +/- 0.1	36.0 +/- 2.0	32.0 +/- 2.0

OTHER AUTOMOTIVE PU TOPCOATS

Product Code	Description	wt/Gal	% Solids	Viscosity
TUC1164	Dull PU Automotive Topcoat	7.5 +/- 0.2	18.0 +/- 0.2	23.0 +/- 5.0 sec #3 Zahn
TUC1395	Dull PU Automotive Topcoat	7.5 +/- 0.2	19.0 +/- 3.0	22.0 +/- 6.0 sec #3 Zahn

TUC1386 Dull Polyurethane Primer/Barrier Coat for Stain Resistant Topcoats

TECHNICAL DATA SHEET

Technical Specifications	TUC1386
% Solids	16.0 +/- 2.0
Viscosity	17.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.5 +/- 0.2
Grind	7+
Gloss	1.9 +/- 0.2
Solvent System	Toluene/Isopropyl Alcohol

TUC1386 is a Dull Polyurethane Primer used as the primer/barrier coat for X-Treme's automotive stain resistant products. It is used to reduce the gloss level, act as a barrier for plasticizer migration and serve as a primer for the stain resistant topcoat. It has very good light and heat stability, good abrasion resistance and very high elongation. This primer is used for stain resistant topcoats that pass Ford's 400,000 Bally Flex tests.

PACKAGING

55-Gallon Drum – 380 lbs

330-Gallon Tote – 2200 lbs

SOP Processing Conditions for TUC1386 with TUC1387 XLinker

PU Primer – 1st Station

[Must be used in conjunction with X-Treme SRT-Denim Stain Resistant Topcoat TUC1388 Dull/TUC1389 Gloss]

Ingredients:

- TUC1386 Dull PU Primer
- TUC1393 Gloss PU Primer
- TUC1387 Cross Linker
- Dilution Solvent (100% IPA)

[Must be used in conjunction with X-treme SRT-Denim Stain Resistant Topcoat TUC1388 Dull/TUC1389 Gloss]

I. MIXING PROCEDURE – INK ROOM

	Percent	Lbs.
Primer Formula:		300
TUC1386 Dull/TUC1393 Gloss PU Primer	98.5%	295.5
TUC1387 Cross Linker	1.5%	4.5
Dilution Solvent	0%	0
TOTAL		**300**

Mixing Procedure:

1. Mix the primer and crosslinker per the above Primer Formula for 15 minutes and check viscosity
2. Add Dilution Solvent to bring the viscosity down to 15 seconds #3 Zahn
3. Mix for an additional 15 minutes and re-check
4. When viscosity holds, cap the drum
5. ****Take sample to lab for pre-check of stain test.**
6. Must be approved prior to taking drum to Print Machine
7. When approved, take drums(s) to Print Machine

II. PRINT MACHINE – OPERATING CONDITIONS

PRINT MACHINE CONDITIONS:

1. ****When you run a color check sample, put a piece in a lab oven at 300^{O}F for 60 seconds and check stain test. If test does not pass, DO NOT RUN. Alert supervisor/technical.**
2. Use TUC1386 Dull PU Primer on Print Roll 120Q (1st Station) – adjust viscosity of primer with 100% IPA to 13-15 sec #3 Zahn
3. Print Roll 95 Line (2nd Station) – Use TUC1388 Dull/TUC1389 Gloss SRT Topcoat Crosslinked – Viscosity must be 13-15 sec #3 Zahn – adjust viscosity with Topcoat Dilution Solvent (80% MEK, 20% IPA)
4. Flush all lines with IPA prior to introducing PU Primer
5. Flush PU Primer through all lines to flush out any residual IPA
6. Recirculate and mix PU Primer throughout the production run – Recheck viscosity and maintain at 13-15 sec #3 Zahn. Supervisor will indicate frequency of recheck.
7. On a long run, maintain at least ½ drum at all times – add fresh material. At the end of a long run or for a short run, make only the amount required for the run.
8. Speed: 25-30 YPM
9. At the end of the run, reduce viscosity to 15 seconds #3 Zahn with 100% IPA and seal drum.

III. PRINT MACHINE – END OF RUN

HANDLING AND STORAGE OF REMAINING TOPCOAT:

1. At the end of the run, drain the pan of topcoat into the drum
2. Reduce viscosity to 15 seconds #3 Zahn with 100% IPA
3. Seal drum for next run

CLEAN-UP:

Clean rolls, pans, and lines with 100% MEK and discard the dirty solvent.

DO NOT PUT DIRTY SOLVENT INTO TOPCOAT.

TECHNICAL DATA SHEET

Technical Specifications	TUC1396R
% Solids	15.0 +/- 1.0
Viscosity	12.0 +/- 1.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.5 +/- 0.2
Grind	7+
Solvent System	MEK/ Toluene

TUC1396R Dull TPO Primer is used in automotive type applications and has been used in this application by some of the major TPO manufacturers for more than 20 years. It can be used with TUC1397R crosslinker. This primer has excellent adhesive properties that aid in recoating topcoats.

TUC1396R can be crosslinked with TUC1397R by blending under agitation 98.2%/1.8% (TUC1396R/TUC1397R). Once crosslinked, this solution has a 24hour pot life.

Crosslinked primer can be coated using a 120Quad roller.

TECHNICAL DATA SHEET

Technical Specifications	TUC1397R
% Solids	100
Viscosity	1200.0 +/- 200.0 mPa·s
Weight per Gallon (lbs)	9.45 +/- 1.0

TUC1397R is a crosslinker for TUC1396R Dull TPO Primer. Solution can be crosslinked by blending under agitation 98.2%/1.8% (TUC1396R/TUC1397R). Once crosslinked, this solution has a 24hour pot life. Crosslinked primer can be coated using a 120Quad roller.

TUC1412 Dull Polyurethane Primer/Barrier Coat for Stain Resistant Topcoats

TECHNICAL DATA SHEET

Technical Specifications	TUC1412
% Solids	12.0 +/- 1.0
Viscosity	14.5 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.2 +/- 0.2
Grind	7+
Gloss	1.5 +/- 0.1
Solvent System	Toluene/Isopropyl Alcohol

TUC1412 is a Dull Polyurethane Primer used as the primer/barrier coat for X-Treme's automotive stain resistant products. It is used to reduce the gloss level, act as a barrier for plasticizer migration and serve as a primer for the stain resistant topcoat. It has very good light and heat stability, good abrasion resistance and very high elongation. This primer is used for stain resistant topcoats that pass Ford's 400,000 Bally Flex tests.

PACKAGING

55-Gallon Drum – 380 lbs

330-Gallon Tote – 2200 lbs

TIC1578 Dull PVC Primer for Automotive Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TIC1578
% Solids	12.0 +/- 2.0
Viscosity	14.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.1 +/- 0.1
Grind	7+
Gloss	1.0 +/- 0.2
Solvent System	Methyl Ethyl Ketone

These coatings are used as a barrier coat, primer coat and color corrective coat for other X-Treme coatings. TIC1578 PVC homopolymer and TIC1586 PVC vinyl acrylic are used in truck seating as John Deere tractor seats for automotive and non-automotive applications.

PACKAGING

55-Gallon Drum – 380 lbs

330-Gallon Tote – 2200 lbs

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TIC1581 Dull PVC Primer for Automotive Topcoat and TIC1586 Dull PVC/Acrylic Primer for Automotive Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TIC1581	TIC1586
% Solids	12.0 +/- 2.0	13.5 +/- 1.5
Viscosity	14.0 +/- 2.0 seconds #3 Zahn	13.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.7 +/- 0.1	7.6 +/- 0.2
Grind	7+	7+
Gloss	2.0 +/- 0.2	2.0 +/- 0.5
Solvent System	Methyl Ethyl Ketone	Methyl Ethyl Ketone

These coatings are used as a barrier coat, primer coat, and color correction coat for other X-Treme coatings. The TIC1581 Dull PVC Primer coat is used as a color correction coat (1st station) in conjunction with X-Treme's SRT coatings and PU Primer. It is also used as a color correction coat for other automotive topcoats. TIC1586 PVC/Acrylic Primer is used as a primer and color correction coat for truck seating as John Deere tractor seats and non-SRT automotive topcoats.

PACKAGING

55-Gallon Drum – 380 lbs

330-Gallon Tote – 2200 lbs

TUC2003 Water-Based Adhesive for PVC/Polyester

TECHNICAL DATA SHEET

Technical Specifications	TUC2003
% Solids	35.0 +/- 3.0
Viscosity	21.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2
Grind	7+
Solvent System	Water

TUC2003 is a water-based adhesive that is applied between PVC and polyester fabrics. TUC2003 is crosslinked with TUC2004 by blending under agitation 97%/3% (TUC2003/ TUC2004). Once crosslinked, this solution has a 24hour pot life. Crosslinked solution can be coated using a 120Quad roller on PVC & polyester fabric. Coated PVC/polyester is then put in press for 1min at 175°C. TUC 2003 adhesive is environmentally friendly and 100% solvent free.

TECHNICAL DATA SHEET

Technical Specifications	TUC2004
Viscosity	8.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.0 +/- 0.2

TUC2004 is a crosslinker for water-based adhesive that is applied between PVC and polyester fabrics. TUC2004 is used in conjunction with TUC2003 by blending under agitation 97%/3% (TUC2003/TUC2004). Once crosslinked, this solution has a 24hour pot life. Crosslinked solution can be coated using a 120Quad roller on PVC & polyester fabric. Coated PVC/polyester is then put in press for 1min at 175°C.

TUC1387 Crosslinker for Stain Resistant Topcoats

TECHNICAL DATA SHEET

Technical Specifications	TUC1387
% Active Ingredients	27.5% Mixture of Sulfonic Acids
Viscosity	8.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.0 +/- 0.2
Solvent System	Isopropyl Alcohol

Stain Test (over TUC1386 base only):
TUC1388R/1389R Topcoat – 93%; TUC-1387 Crosslinker – 7%

Draw down with 95Q roller, then put in oven for 60 sec @ 300°F. Check stain with black permanent marker – must clean completely with 100% IPA.

TUC1387 Crosslinker for X-Treme Stain Resistant Topcoats is a strong acid catalyst which is very stable when used in conjunction with X-Treme's automotive stain resistant topcoats. Once crosslinked, material does not have to be re-crosslinked over time. As long as the appropriate coating viscosity is maintained at 14-15 seconds #3 Zahn, the material will not gel and will continue to perform. Unused crosslinked coatings should be drained from the pan, adjusted for viscosity, and put into a sealed drum until next time the material needs to be used. See SOP for TUC1388R Dull/TUC1389R Gloss SRT Denim Stain Resistant Topcoats for further details.

PACKAGING

5-Gallon Plastic Pail = 35 lbs

SRT STAIN RESISTANT ™

TUC1388R Dull SRT-Denim Stain Resistant Topcoat and TUC1389R Gloss SRT-Denim Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1388R Dull*	TUC1389R Gloss*
% Solids	32-38	32-38
Viscosity	11.0 +/- 3.0 seconds #3 Zahn	11.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2	7.8 +/- 0.2
Grind	7+	7+
Gloss	1.5 +/- 0.2	35
Solvent System	Methyl Ethyl Ketone	Methyl Ethyl Ketone

*Used in conjunction with TUC1412 or TUC1386 (Solvent) Polyurethane Primers

Stain Test (over TUC-1386 Dull PU Primer only):

TUC1388R/1389R Topcoat - 93%; TUC1387 Crosslinker - 7%: Draw down with 95Q roller, then put in oven for 60 sec @ 300ºF. Check stain with black permanent marker - must clean completely with 100% IPA.

When blended with the TUC1387 Crosslinker at the correct proportion and allowed to cure at the proper temperature, TUC1388R/1389R Topcoats will produce a stain resistant coating resistant to black permanent marker, blue jean denim stain, and coffee stains. The topcoat passes GM World Wide specifications and Ford's 400,000 Bally Flex test. When tested on a Martindale, blue jean denim will produce a slight marking that will readily clean with only soap and water. All stains can be completely removed with 100% IPA and a clean white cloth.

These coatings are stable and do not need to be re-crosslinked over time. They will not gel or lose properties if their viscosity is maintained at 14-15 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity, and store the remainder in a sealed drum until needed again. Consult SOP's for these products for handling instructions and recommended conditions of use.

PACKAGING

55-Gallon Drum - 360 lbs
330-Gallon Tote - 2200 lbs

SRT STAIN RESISTANT ™

SOP Processing Conditions for TUC1388R/TUC1389R with TUC1387 XLinker

SRT Denim Topcoat – 2nd Station

[Must be used in conjunction with Dull PU Primer TUC1386]

Ingredients:

- **TUC1388R Dull SRT – Denim Stain Resistant Topcoat**
- **TUC1389R Gloss SRT – Denim Stain Resistant Topcoat**
- **TUC1387 Cross Linker**
- **Topcoat Dilution Solvent (80% MEK // 20% IPA)**

I. MIXING PROCEDURE – INK ROOM

	Percent	Lbs.
Primer Formula:		300
TUC1388R Dull/TU-C1389R Gloss Denim Resist SRT	93%	279
TUC1387 Cross Linker	7%	21
Dilution Solvent	0%	0
TOTAL		**300**

Mixing Procedure:

1. Mix the topcoat and crosslinker per the above Topcoat Formula for 45 minutes and check viscosity
2. Add Topcoat Dilution Solvent to bring the viscosity down to 15 seconds #3 Zahn
3. Mix for an additional 15 minutes
4. Repeat Steps 2 and 3 if necessary until viscosity holds at 15 seconds #3 Zahn
5. When viscosity holds, cap the drum
6. ****Take sample to lab for pre-check of stain test.**
7. Must be approved prior to taking drum to Print Machine
8. When approved, take drums(s) to Print Machine

II. PRINT MACHINE – OPERATING CONDITIONS

PRINT MACHINE CONDITIONS:

1. ****When you run a color check sample, put a piece in a lab oven at 300^{O}F for 60 seconds and check stain test. If test does not pass, DO NOT RUN. Alert supervisor/technical.**
2. Use TUC1386 Dull PU Primer on Print Roll 120Q (1st Station) – adjust viscosity of primer with 100% IPA to 13-15 sec #3 Zahn
3. Print Roll 95 Line (2nd Station) – Use TUC1388 Dull/TUC1389 Gloss SRT Topcoat Crosslinked – Viscosity must be 13-15 sec #3 Zahn – adjust viscosity with Topcoat Dilution Solvent (80% MEK, 20% IPA)
4. Flush all lines with IPA prior to introducing PU Primer
5. Flush PU Primer through all lines to flush out any residual IPA
6. Recirculate and mix PU Primer throughout the production run – Recheck viscosity and maintain at 13-15 sec #3 Zahn. Supervisor will indicate frequency of recheck.
7. On a long run, maintain at least ½ drum at all times – add fresh material. At the end of a long run or for a short run, make only the amount required for the run.
8. Speed: 25-30 YPM
9. At the end of the run, reduce viscosity to 15 seconds #3 Zahn with 100% IPA and seal drum.

III. PRINT MACHINE – END OF RUN

HANDLING AND STORAGE OF REMAINING TOPCOAT:

1. At the end of the run, drain the pan of topcoat into the drum
2. Reduce viscosity to 15 seconds #3 Zahn with 100% IPA
3. Seal drum for next run

CLEAN-UP:

Clean rolls, pans, and lines with 100% and discard the dirty solvent.

DO NOT PUT DIRTY SOLVENT INTO TOPCOAT.

QC TEST:

Check IPA Cleaning at end of print machine. Must clean permanent marker with 100% IPA. If it does not clean, slow down speed to increase temperature and dwell time.

TUC1404 Dull SRT - Solvent Stain Resistant Topcoat
TUC1405 Gloss SRT - Solvent Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1404 Dull	TUC1405 Gloss
% Solids	32.5 +/- 2.0	33.0 +/- 3.0
Viscosity	13.0 +/- 1.0 seconds #3 Zahn	11.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2	7.7 +/- 0.2
Grind	7+	7+
Solvent System Stain Test (All clean with 100% IPA wipes)	• Black & Red permanent marker cleans w/ 100% IPA • Coffee cleans w/ soap & water	• Black & Red permanent marker cleans w/ 100% IPA • Coffee cleans w/ soap & water

Stain Test (over TUC1412 & TUC1386 Dull PU Primers): TUC1404 is a dull solvent based pre-crosslinked topcoat, that needs to attain the equivalent of 150°C for 1 minute. It can be applied with a 95Quad roller. Check stain with black permanent marker – must clean completely with 70% IPA.

TUC1404 can be blended with TUC1405 to achieve adequate gloss. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained between 12-14 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity with IPA and store the remainder in a sealed drum until needed again.

SRT STAIN RESISTANT ™

TUC1406 Dull SRT - Solvent Stain Resistant Topcoat
TUC1407Gloss SRT - Solvent Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1406 Dull	TUC1407 Gloss
% Solids	35.5 +/- 2.0	33.0 +/- 3.0
Viscosity	14.0 +/- 2.0 seconds #3 Zahn	11.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2	7.8 +/- 0.2
Grind	7+	7+
Solvent System Stain Test (All clean with 100% IPA wipes)	• Black & Red permanent marker cleans w/ 100% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water	• Black & Red permanent marker cleans w/ 100% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water

Stain Test (over TUC1412 & TUC1386 Dull PU Primers): TUC1406 is a dull solvent based pre-crosslinked topcoat, that needs to attain the equivalent of 150˚C for 1 minute. It can be applied with a 95Quad roller. Check stain with black permanent marker – must clean completely with 70% IPA.

TUC1406/1407 Topcoats will produce a stain resistant coating resistant to black permanent marker, blue jean denim stain, and coffee stains. When tested on a Martindale, blue jean denim will produce a slight marking that will readily clean with only soap and water. All stains can be completely removed with 100% isopropyl alcohol and a clean white cloth.

TUC1406 can be blended with TUC1407 to achieve adequate gloss. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained between 12-16 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity with IPA and store the remainder in a sealed drum until needed again.

SRT STAIN RESISTANT ™

TUC1408 Dull SRT - Solvent Stain Resistant Topcoat
TUC1409 Gloss SRT - Solvent Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1408 Dull	TUC1409 Gloss
% Solids	36.0 +/- 2.0	32.0 +/- 2.0
Viscosity	13.5 +/- 2.0 seconds #3 Zahn	12.5 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2	7.8 +/- 0.2
Grind	7+	7+
Solvent System Stain Test (All clean with 100% IPA wipes)	• Black & Red permanent marker- cleans w/ 100% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water	• Black & Red permanent marker- cleans w/ 100% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water

Stain Test (over TUC1412 & TUC1386 Dull PU Primers): TUC1408 is a dull solvent based pre-crosslinked topcoat, that needs to attain the equivalent of 150°C for 1 minute. It can be applied with a 95Quad roller. Check stain with black permanent marker – must clean completely with 70% IPA.

TUC1408/1409 Topcoats will produce a stain resistant coating resistant to black permanent marker, blue jean denim stain, and coffee stains. It has excellent flexibility, passing a 400,000 Bally flex test.

TUC1408 can be blended with TUC1409 to achieve adequate gloss. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained between 11-16 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity with IPA and store the remainder in a sealed drum until needed again.

SRT STAIN RESISTANT ™

TUC1415 Dull SRT - Solvent Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1415 Dull*
% Solids	32.5 +/- 2.0
Viscosity	13.0 +/- 1.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2
Grind	7+
Gloss (Black PVC)	1.9 +/- 0.2
Solvent System Stain Test (All clean with 70% IPA wipes)	• Black & Red permanent marker-cleans w/ 70% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water
Bally Flex Test	400,000 Cycles
Wyzenbeek Test	100,000 Cycles
Taber Abrasion (CS10 Wheel, 1000Grams)	1000 Cycles

*Used in conjunction with TUC1412 or TUC1386 (Solvent) Polyurethane Primers

Stain Test (over TUC1412 & TUC1386 Dull PU Primers): TUC1415 is a dull solvent based pre-crosslinked Topcoat, that needs to attain the equivalent of 150°C for 1 minute. It can be applied with a 95Quad roller. Check stain with black permanent marker – must clean completely with 70% IPA.

This topcoat can be blended with TUC1417 to achieve adequate gloss. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained between 12-14 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity with IPA and store the remainder in a sealed drum until needed again.

SRT STAIN RESISTANT ™

TUC1417 Gloss SRT - Solvent Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1417 Gloss*
% Solids	32.5 +/- 2.0
Viscosity	13+/-1 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2
Grind	7+
Gloss (Black PVC)	
Solvent System	
Stain Test (All clean with 70% IPA wipes)	• Black & Red permanent marker-cleans w/ 70% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water
Bally Flex Test	400,000 Cycles
Wyzenbeek Test	100,000 Cycles
Taber Abrasion (CS10 Wheel, 1000Grams)	1000 Cycles

*Used in conjunction with TUC1412 or TUC1386 (Solvent) Polyurethane Primers

Stain Test (over TUC1412 & TUC1386 Dull PU Primers): TUC1417 is a gloss solvent based pre-crosslinked Topcoat, that needs to attain the equivalent of 150˚C for 1 minute. It can be applied with a 95Quad roller. Check stain with black permanent marker - must clean completely with 70% IPA.

This topcoat can be blended with TUC1415 to achieve adequate gloss. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained between 12-14 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity with IPA and store the remainder in a sealed drum until needed again.

SRT STAIN RESISTANT ™

TUC2015R Dull SRT-Water Based Stain Resistant Topcoat
TUC2017 Gloss SRT-Water Based Stain Resistant Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC2015R Dull	TUC2017 Gloss
% Solids	32.0 +/- 2.0	26.0 +/- 2.0
Viscosity	28.0 +/- 3.0 seconds #3 Zahn	20.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	8.6 +/- 0.1	8.8 +/- 0.2
Grind	7+	7+
Gloss	2.2 +/- 0.2	47.0 +/- 3.0

TUC2015R is a dull water based pre-crosslinked acrylic topcoat and TUC2017 is the gloss version. Gloss level can be adjusted by blending the two coatings. These SRT stain resistant coatings clean Blue Jean Stain and Coffee Stain (per GMC specifications) with only soap and water. Other stains like black permanent marker, ball point pen, lipstick, etc. clean with a 70% IPA wipe. These coatings are used with TUC1412 or TUC1386 (Solvent) Polyurethane Primers or TUC2022(Water) Dull Polyurethane/Acrylic Primer.

Processing Conditions:

TUC2015R/2017 SRT Water Base Stain Resistant Topcoat is applied with a 95Tri-Helix or 120Rotoflo roller, then cured at 150ºC for 120 seconds. QC Check for stain: stain with black permanent marker – must clean completely with 70% IPA. This topcoat can be recoated using TUC2022 water based primer or TUC1386 solvent based primer, then applying the TUC2015R/2017 SRT stain resistant topcoats. These coatings are stable and do not need to be re-crosslinked over time. These coatings will not gel or lose properties if the drum is sealed and the viscosity is maintained at 25 seconds #3 Zahn. The stored drum needs to be opened and mixed for 20 minutes prior to sending to the print machine. When finished with a run, drain the pan, adjust the viscosity to 25 seconds #3 Zahn, and store the remainder in a sealed drum until needed again.

PACKAGING

30-Gallon Plastic Drum – 200 lbs

SRT STAIN RESISTANT ™

TECHNICAL DATA SHEET

Application Tests	Approved Results
Stain Test	• Black & Red permanent marker-cleans w/ 70% IPA • Coffee cleans w/ soap & water • Blue denim cleans w/ soap & water
Bally Flex Test	200,000 Cycles
Wyzenbeek Test (4Lbs Pressure, 6Lbs Tension)	100,000 Cycles
Taber Abrasion (CS10 Wheel, 1000Grams)	1000 Cycles

PACKAGING

30-Gallon Plastic Drum – 200 lbs

TUC2023 Dull High Abrasion Water Base Topcoat for PVC and TPO

TECHNICAL DATA SHEET

Technical Specifications	TUC2023 Dull*
% Solids	33.0 +/- 2.0
Viscosity	28.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	8.6 +/- 0.2
Grind	7+
Gloss (Black PVC &TPO)	1.0 +/- 0.2
Solvent System	Water / 9% Isopropyl Alcohol
Stain Test (All clean with 70% IPA wipes) (Cleans with soap & water)	• Resistant to: Black & Red permanent marker • Coffee & Denim
Bally Flex Test	100,000 Cycles
Wyzenbeek Test	100,000 Cycles
Taber Abrasion (CS10 Wheel, 1000Grams)	2000 Cycles

*Used in conjunction with TUC2022 (Water Based Polyurethane/acrylic Primer) or TIC1598R (Solvent Based PVC Acrylic Primer).

TUC2023 is a water based acrylic topcoat. It has high abrasion, stain resistant and non-burnishing properties. This topcoat can be applied to both PVC and TPO base material.

This coating is stable and does not need to be re-crosslinked over time. The solution will not gel or lose properties if fully mixed under agitation and the viscosity is maintained at 25-32 seconds #3 Zahn. When finished with a run, drain the pan, adjust the viscosity and store the remainder in a sealed drum until needed again. Consult SOP's for handling instructions and recommended conditions of use.

SRT STAIN RESISTANT ™

PACKAGING: 30-Gallon Drum = 200 lbs

TUC2022 Dull Water Base Primer/Barrier Coat for Stain Resistant Topcoats for PVC

TECHNICAL DATA SHEET

Technical Specifications	TUC2022
% Solids	30.0 +/- 2.0
Viscosity	16.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.8 +/- 0.2
Grind	7+
Solvent System	Water

TUC2022 Dull Water Base Primer is used as the primer/barrier coat for X-Treme's automotive stain resistant products. It acts as a barrier for plasticizer migration and serves as a primer for the stain resistant topcoat. It has very good light and heat stability, good adhesion and very high elongation. It is the primer used for stain resistant topcoats that passes 100,000 Bally Flex tests.

PACKAGING

30-Gallon Drum – 200 lbs.

TUC2022R Dull Water Base Primer/Barrier Coat for TPO

TECHNICAL DATA SHEET

Technical Specifications	TUC2022R
% Solids	27.0 +/- 2.0
Viscosity	16.0 +/- 3.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.7 +/- 0.2
Grind	7+
Solvent System	Water

TUC2022R Dull Water Base Primer is used as the primer/barrier coat on TPO for X-Treme's automotive products. It is used to reduce the gloss level, act as a barrier for plasticizer migration and serve as a primer for the stain resistant and non-burnishing topcoat. It has very good light and heat stability, good adhesion and very high elongation.

TUC2020-1/ TUC2020 Water Based Non-Burnishing Topcoats

TECHNICAL DATA SHEET

Technical Specifications	TUC2020-1/ TUC2020
% Solids	23.0 +/- 1.0
Viscosity	18.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	8.4 +/- 0.2
Grind	7+
Gloss	0.9 +/- 0.2
Solvent	Water
Bally flex Test	**400,000 Cycles**
Taber Abrasion Test (CS10 Wheel, 1000Grams)	**2000 Cycles**
Wyzenbeek	**50,000 Cycles**

Water Base Non-Burnishing Topcoat does not require any primer: Both TUC2020 and TUC2020-1 are water based topcoats that do not require a primer, but can be used in conjunction with TIC1578 correction coat PVC acrylic primer. These topcoats are environmentally friendly and 100% solvent free. The difference between the two topcoats is that TUC 2020-1 passes Nissan's iron peel test with 24N and TUC2020 with 8N.

In production, a combination of time and temperature to achieve 150°C for 120 seconds is required. Only crosslink required amount of topcoat. Once crosslinked, the viscosity should be 16-20 seconds #3 Zahn and will not gel. When finished with a run, remaining solution will have a pot life of 12 months.

Crosslinking Instructions: Blend under agitation TUC2020/-1 - 95% & TUC2012 Crosslinker - 5% for 15-20 minutes Coat with 95Quad roller, then place in oven for 120 seconds.

PACKAGING

30-Gallon Drum - 250 lbs

5-Gallon Plastic Pale - 35 lbs

TUC2024 Dull Water Based Non-Burnishing PVC Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC2024
% Solids	34.0 +/- 5.0
Viscosity	16.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	8.7 +/- 0.2
Grind	7+
Gloss	0.9 +/- 0.3

Application Test	Approved Results
Bally Flex Test	100,000 Cycles
Wyzenbeek Test (1Lbs Pressure, 4Lbs Tension)	100,000 Cycles
Taber Abrasion (CS10 Wheel, 1000Grams)	2000 Cycles

TUC 2024 is a dull water based polyurethane topcoat. This topcoat can be used in conjunction with TIC 1578, TIC 1586 (solvent) PVC acrylic primers or TUC2022 (water base) acrylic/polyurethane blend primer. TUC 2024 topcoat is environmentally friendly and 100% solvent free.

Processing Conditions:

TUC-2024 can be applied with a 95Quad roller, and then cured at 150°C for 120 seconds. It will not gel or lose properties if fully mixed under agitation and the viscosity is maintained at 16-20 seconds #3 Zahn. When finished with a run, drain the pan and store the remainder in a sealed drum until needed again. Remaining solution will have a pot life of 6 months.

TUC2012 Crosslinker for Water Based Non-Burnishing Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC2012
% Solids	43.0 +/- 2.0
Viscosity	13.0 +/- 1.0 seconds #3 Zahn
Weight per Gallon (lbs)	8.7 +/- 0.2
Grind	7+

TUC 2012 is a carbodiimide crosslinker for water based non-burnishing topcoat. This crosslinker is used in conjunction with TUC 2020 and TUC 2020-1 by blending under agitation 95.0%/5.0% (TUC2020-1/TUC2012). Once crosslinked, the viscosity should be 16-20 seconds #3 Zahn and will not gel.

TUC1398R Dull PU Non-Burnishing Topcoat for PVC/TPO

TECHNICAL DATA SHEET

Technical Specifications	TUC1398R
% Solids	18.0 +/- 2.0
Viscosity	23.0 +/- 5.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.5 +/- 0.2
Grind	7+
Gloss	1.5 +/- 0.1

TUC1398R dull PU non-burnish topcoat is used in automotive type applications and has been used in this application by some of the major TPO and PVC manufacturers for more than 20 years. It passed automotive burnish test, along with all other abrasion, elongation, and light/heat stability tests required.

TUC1402 Air Dry SRT for Boat Bottom

TECHNICAL DATA SHEET

Technical Specifications	TUC1402
% Solids	32.0 +/ -2.0
Viscosity	13.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.7 +/- 0.2
Grind	7+

TUC1402 is an air-dry stain-resistant topcoat for boat bottom application. TUC1402 is crosslinked with TUC1378 by blending under agitation 86%/14% (TUC1402/TUC1378). The crosslinked solution is applied on fiber glass and cures at room temperature after 24 hours. Check stain with black permanent marker – must clean completely with 100% IPA.

SRT STAIN RESISTANT ™

TUC1378 Crosslinker for Air Dry SRT

TECHNICAL DATA SHEET

Technical Specifications	TUC1378
Viscosity	8.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.0+/- 0.2

TUC1378 is a crosslinker for TUC1402 air-dry stain-resistant topcoat. Solution is crosslinked by blending under agitation 98.2%/1.8% (TUC1396R/TUC1397R). The crosslinked solution is applied on boat bottom and cures at room temperature after 24 hours. Check stain with black permanent marker – must clean completely with 100% IPA.

SRT
STAIN RESISTANT
™

TUC1354M2 Ultra-Clear High-Abrasion Topcoat for Double-Polished Clear

TECHNICAL DATA SHEET

Technical Specifications	TUC1354M2
% Solids	50.0 +/- 2.0
Viscosity	18.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.7 +/- 0.3
Grind	7+
Solvent System	Methyl Ethyl Ketone

Preparation: TUC1354M2 – 84%; TUC1338R – 16%

Mix for 15 minutes, then adjust viscosity with a mixture of 80% Methyl Ethyl Ketone and 20% Isopropyl alcohol.

TUC1354M2 Ultra-Clear High-Abrasion Topcoat is used for coating double polished clear for application in marine and automotive-convertible windows. When blended with the correct proportion of TUC1338R Crosslinker, this coating provides a very high abrasion resistant, non-yellowing or fogging topcoat for marine and automotive applications. This coating is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if the viscosity is maintained between 14-15 seconds #3 Zahn.

When finished with a run, drain the pan, adjust the viscosity and store the remainder in a sealed drum until needed again. Consult SOP's for handling instructions and recommended conditions of use.

PACKAGING

55-Gallon Drum – 380 lbs

SRT STAIN RESISTANT ™

TUC1338R Crosslinker
for Ultra-Clear High-Abrasion Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1338R
% Solids	15.0 +/- 2.0
Viscosity	8.0 +/- 2.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.0 +/- 0.2
Grind	7+
Solvent System	Isopropyl Alcohol/Isobutanol

Preparation: TUC1354M2 – 84%; TUC1338R – 16%

Mix for 30 minutes, then adjust viscosity with a mixture of 80% Methyl Ethyl Ketone and 20% Isopropyl alcohol.

TUC1338R Crosslinker for Ultra-Clear High-Abrasion Topcoat is used in conjunction with TUC1354M2 for application in marine and automotive-convertible windows. The coating result is stable and does not need to be re-crosslinked over time. It will not gel or lose properties if the viscosity is maintained between 13-15 seconds #3 Zahn.

When finished with a run, drain the pan, adjust the viscosity and store the remainder in a sealed drum until needed again. Consult SOP's for handling instructions and recommended conditions of use.

PACKAGING

5-Gallon Plastic Pail = 35 lbs

SRT STAIN RESISTANT™

SOP Processing Conditions Ultra-Clear High-Abrasion Topcoat for Double Polished Clear TUC1354M2 with TUC1338R XLinker

Ingredients:

TUC1354M2 Ultra-Clear High-Abrasion Topcoat
TUC1338R Cross Linker
Topcoat Dilution Solvent (80% MEK // 20% IPA)

I. MIXING PROCEDURE – INK ROOM

	Percent	Lbs.
Primer Formula:		300
TUC1354M2 Ultra-Clear High-Abrasion Topcoat	84%	252
TUC1338R Cross Linker	16%	48
Topcoat Dilution Solvent	0%	0
TOTAL		**300**

Mixing Procedure:

1. Mix the topcoat and crosslinker per the above Topcoat Formula for 30 minutes and check viscosity
2. Add Topcoat Dilution Solvent to bring the viscosity down to 15 seconds #3 Zahn
3. ****Take sample to lab for pre-check of topcoat.**
4. Must be approved prior to taking drum to Print Machine
5. When approved, take drums(s) to Print Machine

II. PRINT MACHINE – OPERATING CONDITIONS

PRINT MACHINE CONDITIONS:

1. Print Roll 120 Line – Reverse coat or standard coat with 120 Quad (4.0-4.4 g/m2)
2. Viscosity must be 13-15 sec #3 Zahn – adjust viscosity with Topcoat Dilution Solvent (80% MEK, 20% IPA)
3. Flush all lines with MEK prior to introducing topcoat
4. Flush topcoat through all lines to flush out any residual MEK
5. Recirculate and mix topcoat throughout the production run – Recheck viscosity and maintain at 13-15 sec #3 Zahn. Supervisor will indicate frequency of recheck.
6. On a long run, maintain at least ½ drum at all times – add fresh material. At the end of a long run or for a short run, make only the amount required for the run.
7. Maintain web temperature of less than 70 ¬oC (158 ¬oF) at print machine.
8. Material will be crosslinked when put in oven/press for double polished clear.

III. PRINT MACHINE – END OF RUN

HANDLING AND STORAGE OF REMAINING TOPCOAT:

1. At the end of the run, drain the pan of topcoat into the drum
2. Reduce viscosity to 15 seconds #3 Zahn with 100% IPA
3. Seal drum for next run

CLEAN-UP:

Clean rolls, pans, and lines with 100% and discard the dirty solvent.

DO NOT PUT DIRTY SOLVENT INTO TOPCOAT.

TECHNICAL DATA SHEET

Technical Specifications	TAM100
Strength	100 +/- 2.0
DE	< 0.5
Weight Per Gallon (lbs)	7.9 +/- 0.1
% Solids	36.0 +/- 2.0
Viscosity, SEC #3	32.0 +/- 2.0
Grind	7+

TAM100 is a water based metallic ink that is compatible with waterborne systems. It has light and heat stability and can be used in automotive applications and any outdoor application. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

TUC1164R Dull PU Automotive Topcoat and TUC1395 Dull PU Automotive Topcoat

TECHNICAL DATA SHEET

Technical Specifications	TUC1164R	TUC1395
% Solids	18.0 +/- 0.2	19.0 +/- 3.0
Viscosity	23.0 +/- 5.0 seconds #3 Zahn	22.0 +/- 6.0 seconds #3 Zahn
Weight per Gallon (lbs)	7.5 +/- 0.2	7.5 +/- 0.2
Grind	7+	7+
Solvent System	Toluene/Isopropyl Alcohol	Toluene/Isopropyl Alcohol

TUC1164R Dull PU Automotive Topcoat is a dull leather feel topcoat for use both in automotive and upholstery type applications and has been used in these applications by some of the major PVC manufacturers for more than 20 years. It can be used with and without crosslinking.

TUC1395 is another dull, leather-like automotive topcoat used in various automotive and upholstery applications. Like TUC1164R, it may be used both crosslinked and un-crosslinked.

PACKAGING

55-Gallon Drum – 380 lbs

SOP Processing Conditions for Leather Match Topcoat TUC1164R/TUC1395 Dull Leather Match

Ingredients:

- TUC1164R Dull Leather Match or TUC1395 Dull Leather Match
- Dilution Solvent (100% IPA)

I. MIXING PROCEDURE – INK ROOM

	Percent	Lbs.
Rework Topcoat Formula:		300
New Topcoat	80%	240
Rework Topcoat	20%	60
TOTAL		**300**

Mixing Procedure:

1. Mix the above Topcoat Formula and Dilution Solvent for 30 minutes and check viscosity
2. Add dilution solvent to reduce viscosity to 13-15 seconds #3 Zahn
3. Mix for 15 minutes

II. PRINT MACHINE – OPERATING CONDITIONS

Print Machine Conditions:

1. #1 Roll 95Q
2. #2 Roll 120Q
3. Flush all lines with IPA prior to introducing topcoat
4. Flush topcoat through all lines to flush out any residual IPA
5. Must recirculate topcoat throughout the production run!
6. Must mix topcoat throughout the production run!
7. Viscosity range: 13-15 seconds #3 Zahn
8. Speed: Standard Speed
9. Oven: Standard Oven Conditions

III. PRINT MACHINE – END OF RUN

PRINT MACHINE CONDITIONS:

1. **#1 Roll 95Q**
2. **#2 Roll 120Q**
3. Flush all lines with IPA prior to introducing topcoat
4. Flush topcoat through all lines to flush out any residual IPA
5. **Must recirculate topcoat throughout the production run!**
6. **Must mix topcoat throughout the production run!**
7. Viscosity range: 13-15 seconds #3 Zahn
8. Speed: Standard Speed
9. Oven: Standard Oven Conditions

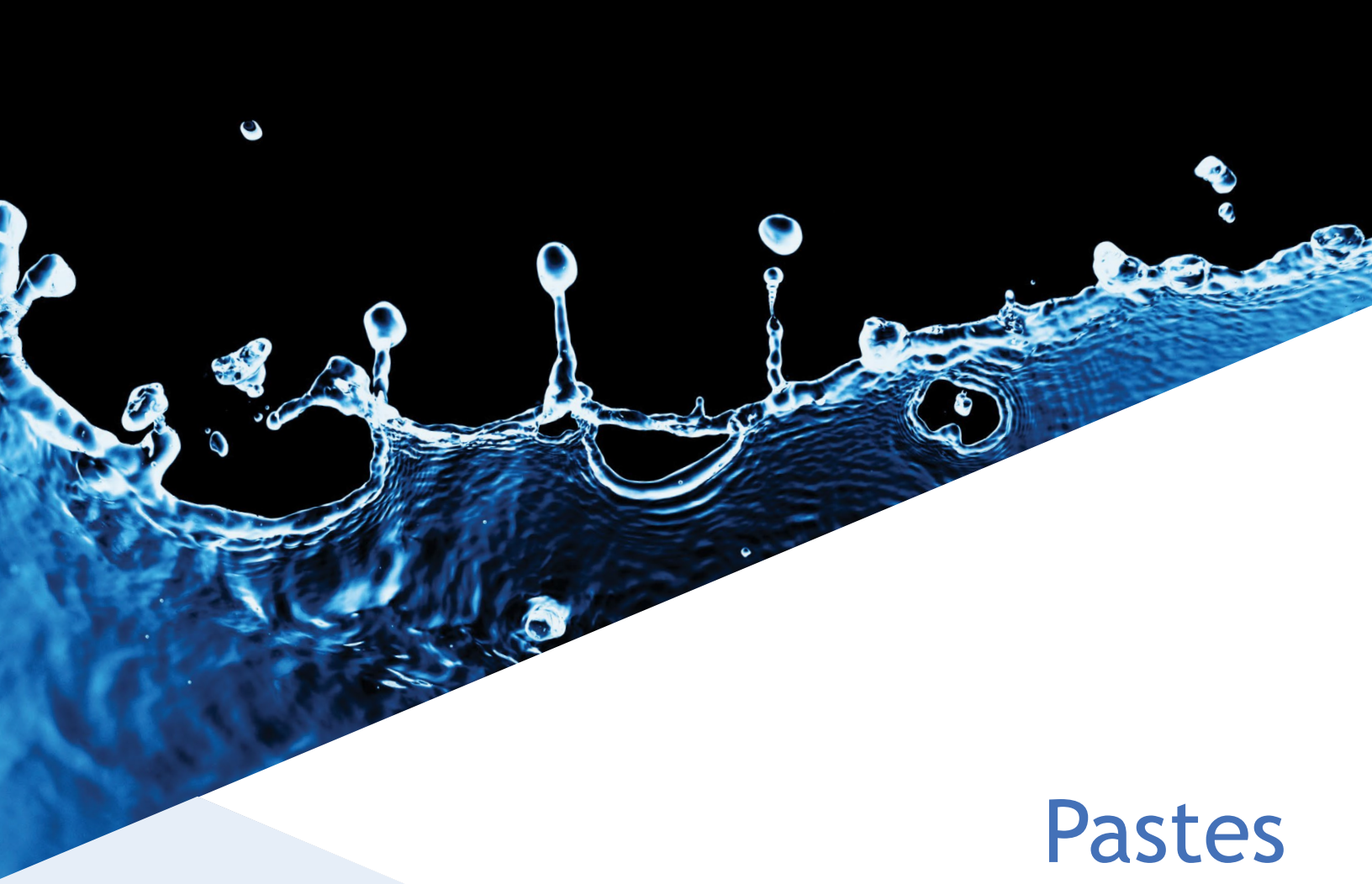
HANDLING AND STORAGE OF REMAINING TOPCOAT:

1. At the end of the run, drain the pan of topcoat into the drum
2. Reduce viscosity to 15 seconds #3 Zahn with 100% IPA
3. Seal drum for next run

CLEAN-UP:

Clean rolls, pans, and lines with 100% and discard the dirty solvent.

DO NOT PUT DIRTY SOLVENT INTO TOPCOAT.



Pastes

X-Treme, Inc has been manufacturing the attached **plasticized pigment dispersions** for more than 30 years. With state-of-the-art dispersion equipment, X-Treme provides a 100% dispersed pigment that will not develop further in subsequent manufacturing processes. These pigments are controlled to exact standards, guaranteeing reproducible color matches each and every time.

X-Treme also produces **automotive standard color matches** – and has for the past 20 years. X-Treme provided Sandusky Athol with 100% of their color matches for more than 10 years, complaint-free. Color match batch sizes vary from 1 drum of 400-500 lbs to 15000 lbs, all in one batch. The master batch can be provided in 55-Gallon drums (400-500 lbs), 330-Gallon totes (2200 lbs), or 5-Gallon plastic pails, pre-weighed to be added directly into the customer's plastisol in increments that will match their standard.

AUTOMOTIVE GRADE PIGMENT DISPERSIONS

Color	Product Code	Description	C.I.	Wt/Gal	Viscosity
Blue	TPB5R	P. Blue G/S	Pigment Blue 15:3	8.5 +/- 0.2	3,000 +/- 500 CPS #4
	TPB12D	P. Blue R/S	Pigment Blue 15:2	8.8 +/- 0.2	5,000 +/- 3,000 CPS #4
	TPB131	Indo Blue R/S	Pigment Blue 60	8.5 +/- 0.2	5,000 +/- 3,000 CPS #4
Green	TPG68R	P. Green B/S	Pigment Green 7	8.3 +/- 0.5	7,000 +/- 3,000 CPS #4
Black	TPK54D	Tint Black	Pigment Black 7	8.7 +/- 0.2	4,000 +/- 2,000 CPS #4
	TPK107R	Carbon Black	Pigment Black 7	8.2 +/- 0.2	3,500 +/- 1,500 CPS #4
	TPK108	Jet Black	Pigment Black 7	8.1 +/- 0.1	17,500 +/- 2,500 CPS
Orange	TPO1	Indo Orange	Pigment Orange 43	8.3 +/- 0.2	500 +/- 300 CPS #4
Red	TPR4R	Quin Red Y/S	Pigment Violet 19	8.7 +/- 0.2	3,000 +/- 2,000 CPS #4
	TPR64R	Quin Red B/S	Pigment Violet 19	8.4 +/- 0.2	3,000 +/- 2,000 CPS #4
	TPR71	Red B/S	Pigment Red 254	8.6 +/- 0.5	1,000 +/- 400 CPS #4
	TPR151R	Red Oxide	Pigment Red 101	14.5 +/- 0.5	3,000 +/- 1,000 CPS #4
Violet	TPV4	Quin Violet B/S	Pigment Violet 19	8.5 +/- 0.2	5,500 +/- 2,500 CPS #4
	TPV13	Carbazole Violet	Pigment Violet 23	8.4 +/- 0.5	5,000 +/- 1,000 CPS #4
White	TPW65R	White	Pigment White 6	15.4 +/- 0.2	4,000 +/- 2,000 CPS #4
Yellow	TPY86	Irgazin Yellow	Pigment Yellow 110	9.4 +/- 0.5	3,000 +/- 2,000 CPS #4
	TPY98R	Yellow Oxide	Pigment Yellow 42	14.5 +/- 0.2	5,000 +/- 2,500 CPS #4
	TPY107	Quin Yellow	Pigment Yellow 138	8.9 +/- 0.2	3,000 +/- 2,000 CPS #4

ANTIMONY OXIDE AND BLOWING AGENT DISPERSIONS

Color	Product Code	Description	C.I.	Wt/Gal	Viscosity
Antimony Oxide	TDA101S	80% Antimony Oxide	Pigment White 11 (77052)	22.0 +/- 1.0	3,000 +/- 2,000 CPS #4 Spindle 20 RPM
Blowing Agents	TPB23	Blowing Agent with Activator	N/A	10.4 +/- 0.2	20,000 +/- 10,000 CPS #4 Spindle 20 RPM
	TPB27	Blowing Agent without Activator	N/A	10.0 +/- 0.4	20,000 +/- 10,000 CPS #4 Spindle 20 RPM

TECHNICAL DATA SHEET

Technical Specifications	TPB5R
Pigment Code	Pigment 15:4 NCNF (74160)
% Pigment	20%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.5 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 500
Grind	7+

TPB5R Pthalo Blue Green Shade is light and heat stable and can be used in automotive applications as well as outdoor applications. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	L	5	8	8	4-5	4	4	3-4

TECHNICAL DATA SHEET

Technical Specifications	TPB12D
Pigment Code	Pigment 15:2 NCNF (74160)
% Pigment	25%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.8 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	5,000 +/- 3,000
Grind	7+

TPB12D Blue Red Shade is light and heat stable and can be used in automotive applications as well as outdoor applications. It has been sold to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	H	5	8	8	4-5	4-5	5	4

TPB131 Indo Blue R/S for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPB131
Pigment Code	Pigment Blue 60 (69800)
% Pigment	20%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.5 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 500
Grind	7+

TPB131 is the most chemical-resistant red shade blue available. Its high stability makes it useful in automotive, pool liner, and outdoor applications. It is very red shade (redder than TPB12D), but it maintains its excellent light and heat stability even in light tint. It has been supplied to many major USA automotive and PVC pool liner suppliers for more than 20 years.

TPG68R P. Green B/S Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPG68R
Pigment Code	Pigment Green 7
% Pigment	25%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	9.4 +/- 0.6
Viscosity, #4 Spindle @ 20 RPM	7,000 +/- 3,000
Grind	7+

TPG68R is used extensively in automotive applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	H	5	8	8	5	5	5	4-5

TPK54D Tint Black Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPK54D
Pigment Code	Pigment Black 7
% Pigment	17%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.7 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	4,000 +/- 2,000
Grind	7+

TPK54D demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 450 lbs

330-Gallon Tote – 2200 lbs

TPK107R Carbon Black Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPK107R
Pigment Code	Pigment Black 7
% Pigment	10%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.2 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Grind	7+

TPK107R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 450 lbs

330-Gallon Tote – 2200 lbs

TPK108 Jet Black Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPK108
Pigment Code	Pigment Black 7
% Pigment	10%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.1 +/- 0.1
Viscosity, #4 Spindle @ 20 RPM	3,500 +/- 1,500
Grind	7+

TPK108 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 450 lbs

330-Gallon Tote – 2200 lbs

TPO1 Indo Orange Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPO1
Pigment Code	Pigment Orange 43 (71105)
% Pigment	8%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.3 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	500 +/- 300
Grind	7+

TPO1 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

TPR4R Quin Red Y/S Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPR4R
Pigment Code	Pigment Violet 19
% Pigment	20%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.7 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Grind	7+

TPR4R is used externally in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	4-5	3-4	L	5	8	8	5	5	4-5	3-4

TPR64R Quin Red B/S Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPR64R
Pigment Code	Pigment Violet 19
% Pigment	25%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.4 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Grind	7+

TPR64R has good light and heat stability and can be used in automotive and outdoor applications. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		4.8	260	260	8	8	4-5	3	L	5	8	7-8	4-5	4-5	4	-

TPR71 Red B/S Pigment Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPR71
Pigment Code	Pigment Red 254
% Pigment	22%
Strength	100 +/- 2
DE	< 1.0
Weight Per Gallon (lbs)	8.6 +/- 0.5
Viscosity, #4 Spindle @ 20 RPM	1,000 +/- 400
Grind	7+

TPR71 has good light and heat stability and can be used in automotive and outdoor applications. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	4	-	H	5	8	8	5	5	5	3

TPR151R Red Oxide Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPR151R
Pigment Code	Pigment Red 101
% Pigment	60%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	14.5 +/- 0.5
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 1,000
Grind	7+

TPR151R has excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

TPV4 Quin Violet B/S Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPV4
Pigment Code	Pigment Violet 19 (73900)
% Pigment	20%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.5 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	5,500 +/- 2,500
Grind	7+

TPV4 is used externally in automotive applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	7-8	4	-	L	5	7-8	7	4-5	4	4	3

TPV13 Carbazole Violet Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPV13
Pigment Code	Pigment Violet 23
% Pigment	10%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.4 +/- 0.5
Viscosity, #4 Spindle @ 20 RPM	5,000 +/- 1,000
Grind	7+

TPV13 is used externally in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		3-4	240	260	7-8	3-4	4	3-4	L	4.3	8	6-7	4-5	3	4-5	-

TPW65R White Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPW65R
Pigment Code	Pigment White 6
% Pigment	65%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	15.4 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	4,000 +/- 2,000
Grind	7+

TPW65R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 450 lbs

330-Gallon Tote – 2200 lbs

TPY86R Irgazin Yellow 3RLTN for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPY86R
Pigment Code	Pigment Yellow 110
% Pigment	32%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	9.4 +/- 0.5
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Grind	7+

TPY86R is used extensively in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	7-8	8	4-5	4	H	5	8	8	4-5	4-5	4-5	4-5

TPY98R Yellow Oxide Pigment for Automotive Applications

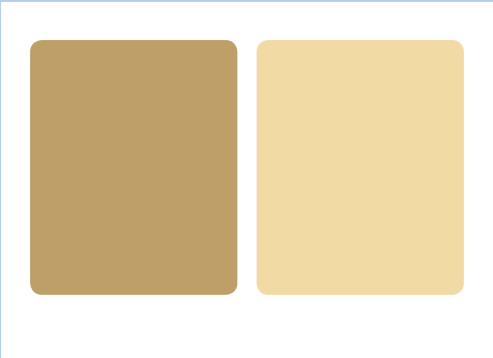
TECHNICAL DATA SHEET

Technical Specifications	TPY98R
Pigment Code	Pigment Yellow 42
% Pigment	64%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	14.5 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	5,000 +/- 2,500
Grind	7+

TPY98R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 500 lbs



TPY107 Quin Yellow Pigment for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TPY107
Pigment Code	Pigment Yellow 138 (56300)
% Pigment	25%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.9 +/- 0.2
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Grind	7+

TPY107 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum - 500 lbs

		Applications Performance												
		HDPE							PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		4-5	280	270	8	7	-	-	L	4-5	7-8	7	5	4-5	-	-

TDA101S Antimony Oxide Dispersion in DIDP

TECHNICAL DATA SHEET

Technical Specifications	TDA101S
% Antimony Trioxide	80.0 +/- 0.5
% DIDP	20.0 +/- 0.5
Weight Per Gallon (lbs)	22.0 +/- 0.1
Viscosity, #4 Spindle @ 20 RPM	3,000 +/- 2,000
Strength	100 +/- 2
DE	< 0.5
Grind	7+

TDA101S Antimony Oxide is a dispersion of 80% Antimony Trioxide in 20% DIDP. Both the color and amount of antimony trioxide are controlled to very tight tolerances, insuring consistency of color and fire retardant properties in each batch. TDA101S has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

5-Gallon Pail – 50 lbs

55-Gallon Drum – 500 lbs

TDB23 Blowing Agent Dispersion in DIDP with Activator

TECHNICAL DATA SHEET

Technical Specifications	TDB23
% Blowing Agent (Celogen AZ130)	50%
% Activator (Plastistab 2275)	25%
% DIDP	25%
Weight Per Gallon (lbs)	10.4 +/- 0.2
Viscosity, #6 Spindle @ 20 RPM	20,000 +/- 10,000
Grind	7+

TDB23 is a blowing agent dispersion with activator in DIDP. It is tightly controlled to provide uniform and consistent blow and density properties from batch to batch. Uniform cell structure and density are the results of X-Treme's processing and QC procedures. TDB23 Blowing Agent has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

5-Gallon Pail - 50 lbs

55-Gallon Drum - 450 lbs

TECHNICAL DATA SHEET

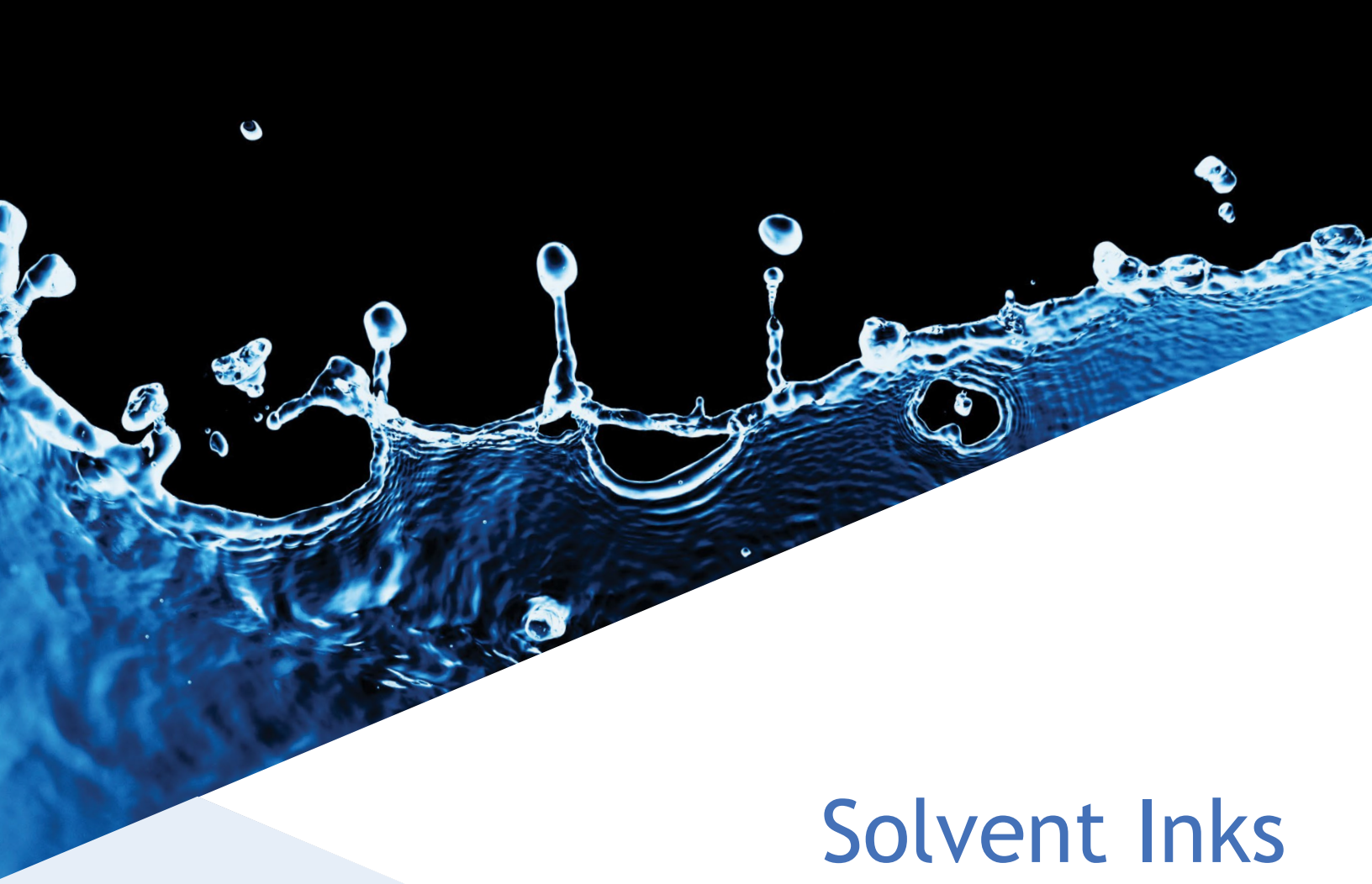
Technical Specifications	TDB26	TDB27
% Blowing Agent (Celogen AZ130)	40%	50%
% DIDP	60%	50%
Weight Per Gallon (lbs)	9.5 +/- 0.2	10.0 +/- 0.4
Viscosity, #6 Spindle @ 20 RPM	19,000 +/- 4,000	20,000 +/- 10,000
Grind	7+	7+

TDB26 and TDB27 blowing agents in DIDP are provided in 40% or 50% concentrations of Celogen AZ130 type blowing agent. They are both tightly controlled to provide uniform and consistent blow and density properties from batch to batch. Uniform cell structure and density are the results of X-Treme's processing and QC procedures. TDB26 and TDB27 Blowing Agent have been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

5-Gallon Pail - 50 lbs

55-Gallon Drum - 450 lbs



Solvent Inks

X-Treme, Inc has been manufacturing the attached **solvent inks** for more than 30 years. With **state-of-the-art dispersion equipment**, X-Treme provides a 100% dispersed pigment that will not develop further in subsequent manufacturing processes. These pigments are controlled to exact standards, guaranteeing reproducible color matches each and every time.

X-Treme also produces **automotive standard color matches** – and has for the past 20 years. X-Treme provided Sandusky Athol with 100% of their color matches for more than 10 years, complaint-free. Color match batch sizes vary from 1 drum of 400-500 lbs to 15000 lbs, all in one batch. The master batch can be provided in 55-Gallon drums (400-500 lbs), 330-Gallon totes (2200 lbs), or 5-Gallon plastic pails.

AUTOMOTIVE GRADE SOLVENT INKS

Color	Product Code	Description	C.I.	Wt/Gal	Viscosity
Blue	TIB393R	P. Blue G/S Ink	Pigment Blue 15:3 (74160)	8.2 +/- 0.2	500 +/- 250 CPS #4 Spindle 20 RPM
	TIB396	P. Blue R/S Ink	Pigment Blue 15:2 (74160:2)	8.0 +/- 0.2	1,000 +/- 500 CPS #4 Spindle 20 RPM
	TIB407	Indo Blue R/S Ink	Pigment Blue 60 (69800)	7.9 +/- 0.2	15.0 +/- 3.0 seconds #3 Zahn
Green	TIG549R	P. Green B/S Ink	Pigment Green 7 (74260)	8.5 +/- 0.2	500 +/- 250 CPS #4 Spindle 20 RPM
Black	TIK814R	Carbon Black Ink	Pigment Black 7 (77266)	7.6 +/- 0.2	250 +/- 150 CPS #4 Spindle 20 RPM
	TIK860	Jet Black Ink	Pigment Black 7	7.8 +/- 0.2	175 +/- 75 CPS #4 Spindle 20 RPM
Orange	TIO36R	Indo Orange Ink	Pigment Orange 43 (71105)	7.6 +/- 0.2	1,000 +/- 500 CPS #4 Spindle 20 RPM
Red	TIR819	Red B/S Ink	Pigment Red 254	7.4 +/- 0.2	16.0 +/- 2.0 seconds #3 Zahn
	TIR862R	Red Oxide Ink	Pigment Red 101 (77491)	10.8 +/- 0.5	1,500 +/- 500 CPS #4 Spindle 20 RPM
	TIR869	Quin Red Y/S Ink	Pigment Violet 19	7.7 +/- 0.3	450 +/- 350 CPS #4 Spindle 20 RPM
	TIR890	Quin Red B/S Ink	Pigment Violet 19	8.0 +/- 0.3	2,300 +/- 300 CPS #4 Spindle 20 RPM
Violet	TIV944M	Carbazole Violet Ink	Pigment Violet 23	8.0 +/- 0.3	300 +/- 100 CPS #4 Spindle 20 RPM
	TIV945R	Quin Violet B/S Ink	Pigment Violet 19 (73900)	8.4 +/- 0.5	700 +/- 200 CPS #4 Spindle 20 RPM
White	TIW217	White Ink	Pigment White 6 (77891)	12.1 +/- 0.3	5,000 +/- 1,000 CPS #4 Spindle 20 RPM
Yellow	TIY260	Quin Yellow Ink	Pigment Yellow 138 (56300)	7.6 +/- 0.2	600 +/- 400 CPS #4 Spindle 20 RPM
	TIY288	Irgazin Yellow Ink	Pigment Yellow 110	8.5 +/- 0.2	5,000 +/- 1,500 CPS #4 Spindle 20 RPM
	TIY289R	Yellow Oxide Ink	Pigment Yellow 42	10.5 +/- 0.2	2,500 +/- 1,500 CPS #4 Spindle 20 RPM
Metallic	TIM1011	Metallic Urethayne		7.9 +/- 0.1	

TIB393R P. Blue G/S Ink or Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIB393R
Pigment Code	Pigment 15:4 NCNF (74160)
% Pigment	14%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.2 +/- 0.2
% Solids	32 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	500 +/- 250
Grind	7+

TIB393R is light and heat stable and can be used in automotive applications as well as outdoor applications. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	L	5	8	8	4-5	4	4	3-4

TIB396 P. Blue R/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIB396
Pigment Code	Pigment 15:2 NCNF (74160)
% Pigment	12%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.0 +/- 0.2
% Solids	30 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	1,000 +/- 500
Grind	7+

TIB396 is light and heat stable and can be used in automotive applications as well as outdoor applications. It has been sold to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	H	5	8	8	4-5	4-5	5	4

TIB407 Indo Blue R/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIB407
Pigment Code	Pigment Blue 60 (69800)
% Pigment	13%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.9 +/- 0.2
% Solids	35 +/- 2%
Viscosity	15 +/- 3 seconds #3 Zahn
Grind	7+

TIB407 is the most chemical-resistant red shade blue available. Its high stability makes it useful in automotive, pool liner, and outdoor applications. It is very red shade (redder than TPB-12D), but it maintains its excellent light and heat stability even in light tint. It has been supplied to many major USA automotive and PVC pool liner suppliers for more than 20 years.

TIG549R P. Green B/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIG549R
Pigment Code	Pigment Green 7
% Pigment	15%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.5 +/- 0.2
% Solids	33 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	500 +/- 250
Grind	7+

TIG549R is used extensively in automotive applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years. years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	5	5	H	5	8	8	5	5	5	4-5

TIK814R Carbon Black Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIK814R
Pigment Code	Pigment Black 7
% Pigment	14%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.6 +/- 0.2
% Solids	31 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	250 +/- 150
Grind	7+

TIK814R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum - 450 lbs

330-Gallon Tote - 2200 lbs

TIK860 Jet Black Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIK860
Pigment Code	Pigment Black 7
% Pigment	6%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.8 +/- 0.2
% Solids	24 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	175 +/- 75
Grind	7+

TIK860 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum - 450 lbs

330-Gallon Tote - 2200 lbs

TIO36R Indo Orange Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIO36R
Pigment Code	Pigment Orange 43 (71105)
% Pigment	4%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.6 +/- 0.2
% Solids	26 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	1,000 +/- 500
Grind	7+

TIO36R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

TIR819 Red B/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIR819
Pigment Code	Pigment Red 254
% Pigment	8%
Strength	100 +/- 2
DE	< 1.0
Weight Per Gallon (lbs)	7.4 +/- 0.2
% Solids	30 +/- 2%
Viscosity	15 +/- 3 seconds #3 Zahn
Grind	7+

TIR819 has good light and heat stability and can be used in automotive and outdoor applications. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE								PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	4	-	H	5	8	8	5	5	5	3

TIR862R Red Oxide Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIR862R
Pigment Code	Pigment Red 101
% Pigment	35%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	10.8 +/- 0.5
% Solids	57 +/-2%
Viscosity, #4 Spindle @ 20 RPM	1,500 +/- 500
Grind	7+

TIR862R has excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

TIR869 Quin Red Y/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIR869
Pigment Code	Pigment Violet 19
% Pigment	12%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.7 +/- 0.3
% Solids	26 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	450 +/- 350
Grind	7+

TIR869 is used externally in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	8	4-5	3-4	L	5	8	8	5	5	4-5	3-4

TIR890 Quin Red B/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specificatons	TIR890
Pigment Code	Pigment Violet 19
% Pigment	15%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.0 +/- 0.3
% Solids	26 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	2,300 +/- 300
Grind	7+

TIR890 is used externally in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		4.8	260	260	8	8	4-5	3	L	5	8	7-8	4-5	4-5	4	-

TIV944M Carbazole Violet Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIV944M
Pigment Code	Pigment Violet 23
% Pigment	10%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.0 +/- 0.3
% Solids	22 +/-2%
Viscosity, #4 Spindle @ 20 RPM	300 +/- 100
Grind	7+

TIV944M is used externally in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		3-4	240	260	7-8	3-4	4	3-4	L	4.3	8	6-7	4-5	3	4-5	-

TIV945R Quin Violet B/S Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIV945R
Pigment Code	Pigment Violet 19 (73900)
% Pigment	10%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.4 +/- 0.5
% Solids	30 +/-2%
Viscosity, #4 Spindle @ 20 RPM	700 +/- 200
Grind	7+

TIV945R is used externally in automotive applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance												
		HDPE							PVC-p					
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	8	7-8	4	-	L	5	7-8	7	4-5	4	4	3

TIW217 White Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIW217
Pigment Code	Pigment White 6
% Pigment	50%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	12.1 +/- 0.3
% Solids	64 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	5,000 +/- 1,000
Grind	7+

TIW217 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum – 500 lbs

330-Gallon Tote – 4500 lbs

TIY260 Quin Yellow Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIY260
Pigment Code	Pigment Yellow 138 (56300)
% Pigment	9%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	7.6 +/- 0.2
% Solids	30 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	600 +/- 400
Grind	7+

TIY260 demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING
55-Gallon Drum - 500 lbs

Full Shade	White Reduction	Applications Performance													
		HDPE							PVC-p						
		Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		4-5	280	270	8	7	-	-	L	4-5	7-8	7	5	4-5	-	-

TIY288 Irgazin Yellow Ink for Automotive Applications

TECHNICAL DATA SHEET

Technical Specifications	TIY288
Pigment Code	Pigment Yellow 110
% Pigment	29%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	8.5 +/- 0.2
% Solids	41 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	5,000 +/- 1,500
Grind	7+

TIY288 is used extensively in automotive applications and outdoor applications because of its excellent heat and light stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

		Applications Performance													
		HDPE							PVC-p						
Full Shade	White Reduction	Migration FS 0.1%	Heat FS 0.1%	Heat WR 1:10	Light FS 0.1%	Light WR 1:10	Weather 3000 h FS 0.1%	Weather 3000 h WR 1:10	Warping	Migration FS 0.1%	Light FS 0.1%	Light WR 1:10	Hot light 600 kJ FS 0.1%	Hot light 600 kJ WR 1:10	Weather 5000 h FS 0.1%	Weather 5000 h WR 1:10
		5	300	300	7-8	8	4-5	4	H	5	8	8	4-5	4-5	4-5	4-5

TIY289R Yellow Oxide Ink for Automotive Applications

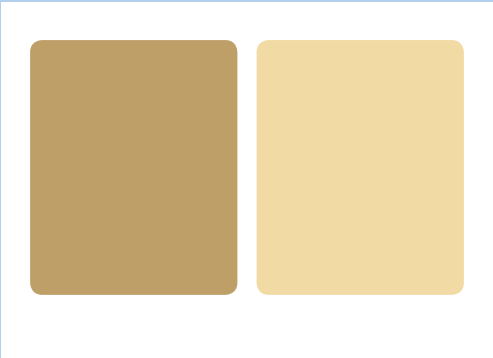
TECHNICAL DATA

Technical Specifications	TIY289R
Pigment Code	Pigment Yellow 42
% Pigment	37%
Strength	100 +/- 2
DE	< 0.5
Weight Per Gallon (lbs)	10.5 +/- 0.2
% Solids	44 +/- 2%
Viscosity, #4 Spindle @ 20 RPM	2,500 +/- 1,500
Grind	7+

TIY289R demonstrates excellent color, opacity, and stability. It has been supplied to many of the major USA automotive PVC suppliers for more than 20 years.

PACKAGING

55-Gallon Drum - 500 lbs



TIM1011 Metallic Urethane Solvent Ink

TECHNICAL DATA SHEET

Technical Specifications	TIM1011
Strength	100 +/- 2.0
DE	< 0.5
Weight Per Gallon (lbs)	7.9 +/- 0.1
% Solids	36 +/- 2%
Viscosity, Zahn #3	32.0 +/- 2.0
Grind	7+

TIM1011 is a Solvent based metallic ink that is compatible with waterborne systems. It is light and heat stable and can be used for fashion applications.