



大恭化學工業股份有限公司

TAH KONG CHEMICAL INDUSTRIAL CORP.

7TH FLOOR 778, PA TE ROAD, SEC. 4,

TAIPEI, REPUBLIC OF CHINA

台北市八德路四段七七八號

新矽谷大樓七樓

TEL:(02)7859081-7

TLX:25217 TKCPIGMENT

CABLE:TKCHEMIAL TAIPEI

FAX:(02)7850907

Master Batch for TPU Injection and Extrusion

(Type of Thermoplastic Polyurethane: Polyester)

- 1. Description:** TUM is the Master Batch which is designed for TPU coloration. This product has good dispersion, physical properties and coloration. It is suitable for TPU Injection / Extrusion, Calender and other related applications.
- 2. Appearance:** Master Batch
- 3. Product Code:** TUM can be custom-made by different requirements (ex. color shade, concentration, operations' process and physical properties).

Item Code	Color	Pigment No.	Heat Resistance	Light Fastness	Migration
TUM Yellow U0014	Yellow	PY-191	5	6-7	4.7
TUM Yellow U0031	Yellow (Greenish)	PY-151	5	6-7	4.8
TUM Yellow U0032	Yellow (Reddish)	PY-139	5	7-8	4.9
TUM Orange U1022	Orange	PO-64	5	7-8	4~5
TUM Red U2020	Red	PR-48:3	4-5	6	4.9
TUM Red U2022	Red (Bluish)	PR-122	5	7-8	4.8
TUM Brown U3008	Brown	PR-101	5	8	5
TUM Blue U5034	Blue (Reddish)	PB-15:1	5	7-8	4-5
TUM Blue U5037	Blue	PB-15:3	5	7-8	5
TUM Green U6012	Green	PG-7	5	7-8	4.9
TUM Black 7U001	Black	PBK-7	5	8	5
TUM White U8030	White	PW-6	5	7	5



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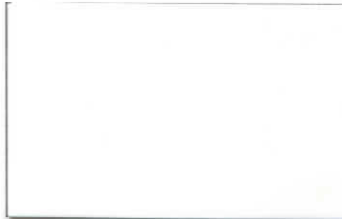

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Remarks:

- a. The heat resistance test was conducted according to ISO Grey Scale and the rating from 1 to 5. The dosage of pigment: 0.2%. The condition of Heat Resistance test: 200°C×5mins.
 - b. The light fastness test was conducted according to DIN 54003 Blue Scale from 1 to 8. The dosage of pigment: 0.2%. The condition of Light Fastness test: Xenon arc lamp irradiation energy 1.1W/m²×24hrs.
 - c. The migration test was conducted according to CIBA Grey Scale and the rating from 1 to 5. The full shade dosage of pigment: 1.6% and white shade is used to TUM White U8030 6.67%+80A TPU resin. The condition of Migration test: 80°C×5kg×24hrs.
4. Recommended dosage is 2~4% and temperature can be controlled between 140~200°C.
5. Notices:
- a. Adequate drying before using is recommended.
 - b. Recommended Processing Temperature: controlled between 140~200°C.

The above data and results are based on controlled or lab work and must be confirmed by buyer by testing for the intended conditions of use.

Item Code	CI Pigment No.	Full	Tint
		Color: 2.0 PHR	Color: 1.0 PHR # White: 3.3 PHR
TUM Yellow U0014	PY-191		
TUM Yellow U0031	PY-151		
TUM Yellow U0032	PY-139		
TUM Orange U1022	PO-64		
TUM Red U2020	PR-48:3		
TUM Red U2022	PR-122		
TUM Brown U3008	PR-101		

Item Code	CI Pigment No.	Full	Tint
		Color: 2.0 PHR	Color: 1.0 PHR # White: 3.3 PHR
TUM Blue U5034	PB-15:1		
TUM Blue U5037	PB-15:3		
TUM Green U6012	PG-7		
TUM Black 7U001	PBK-7		
* TUM White U8030	PW-6		

White: TUM White U8030

* TUM White U8030

Full: Color: 2.0 PHR

Tint: Color: 2.0 PHR + TUM Black 7U001: 0.2 PHR



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Master Batch for TPU Injection and Extrusion

(Type of Thermoplastic Polyurethane: Polyether)

- 1. Description:** TUM is the Master Batch which is designed for TPU coloration. This product has good dispersion, physical properties and coloration. It is suitable for TPU Injection / Extrusion, Calender and other related applications.
- 2. Appearance:** Master Batch
- 3. Product Code:** TUM can be custom-made by different requirements (ex. color shade, concentration, operations' process and physical properties).

Item Code	Color	Pigment No.	Heat Resistance	Light Fastness	Migration	Halogen*
TUM Yellow U0008	Yellow (Greenish)	PY-151	5	6-7	4.8	Not found
TUM Yellow U0009	Yellow	PY-191	5	6-7	4.7	Exist
TUM Yellow U0010	Yellow (Reddish)	PY-139	5	7-8	4.9	Not found
TUM Orange U1009	Orange	PO-64	5	7-8	4~5	Not found
TUM Red U2015	Red	PR-48:3	4-5	6	4.9	Exist
TUM Red U2017	Red (Bluish)	PR-122	5	7-8	4.7	Not found
TUM Blue U5024	Blue	PB-15:1	5	7-8	4~5	Not found
TUM Green U6010	Green	PG-7	5	7-8	4.9	Exist
TUM Black U7025	Black	PBK-7	5	8	5	Not found
TUM White U8009	White	PW-6	5	7	5	Not found

* The amount of Halogen in the pigment structure definition was conducted according to IEC 61249-2-21:2003 and the each amount of Chlorine / Bromine < 900ppm, the total amount of Chlorine + Bromine < 1500ppm.



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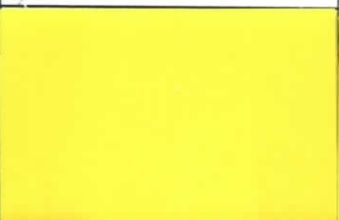


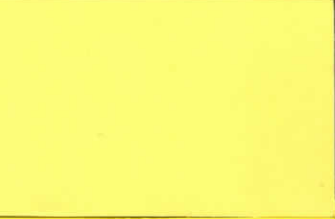












- a. The heat resistance test was conducted according to ISO Grey Scale and the rating from 1 to 5. The dosage of pigment: 0.2%. The condition of Heat Resistance test: 200°C×5mins.
- b. The light fastness test was conducted according to DIN 54003 Blue Scale from 1 to 8. The dosage of pigment: 0.2%. The condition of Light Fastness test: Xenon arc lamp irradiation energy 1.1W/m²×24hrs.
- c. The migration test was conducted according to CIBA Grey Scale and the rating from 1 to 5. The full shade dosage of pigment: 1.6% and white shade is used to TUM White U8030 6.67%+80A TPU resin. The condition of Migration test: 80°C×5kg×24hrs.

9. Recommended dosage is 2~4% and temperature can be controlled between 140~200°C.

10. Notices:

- a. Adequate drying before using is recommended.
- b. Recommended Processing Temperature: controlled between 140~200°C.

The above data and results are based on controlled or lab work and must be confirmed by buyer by testing for the intended conditions of use.

Item Code	CI Pigment NO.	Full Color:1.0 PHR	Tint Color:1.0 PHR TAB WH:2.0PHR
TUM Yellow U0008	PY-151		
TUM Yellow U0009	PY-191		
TUM Yellow U0010	PY-139		
TUM Orange U1009	PO-64		
TUM Red U2015	PR-48:3		
TUM Red U2017	PR-122		
TUM Blue U5024	PB-15:1		
TUM Green U6010	PG-7		

Item Code	CI Pigment NO.	Full Color:1.0 PHR	Tint Color:1.0 PHR TAB WH:2.0PHR
TUM Black U7025	PBK-7		
TUM White U8009	PW-6		
* TUM WH U8009 Full:Color:2.0 PHR Tint:Color:2.0 PHR+TUM BK U7025:0.2PHR			