



Pete's Luminous Creations

10 Anson Road,
International Plaza, #15-14
Singapore 079903

PHOTO LUMINESCENT PLASTIC MASTERBATCH and CERAMIC GLAZE

This document contains information that is needed for using and producing Photo Luminescent Plastic Master Batch products and Ceramic Glaze. Both are different products. Photo Luminescent Plastic Master Batch is used for the production of Glow in the Dark Plastic Products while Photo Luminescent Ceramic Glaze is used for direct application on bare ceramic products.

Photo Luminescent Plastic Master Batch

This product is used mainly for the production of glow in the dark plastic products. With the exception of the Universal Plastic Master Batch mentioned later, the rest of the groups could be melted and molded into finished plastic products directly. The Universal Plastic Master Batch can be mixed with clear resins like PE, PP etc to form glow in the dark plastic products.

Plastic Type	Model	Price in US\$	Plastic Type	Model	Price in US\$
PP Series	PP6-10	\$58/kg	PE Series	PE6-10	\$58/kg
	PP6-20	\$81/kg		PE6-20	\$81/kg
	PP7D-50	\$167/kg		PE6D-50	\$120/kg
	PP6D-50	\$119/kg		PE7D-50	\$172/kg
AS Series	AS7D-50	\$174/kg	PS Series	PS7D-50	\$148/kg
	AS6D-50	\$122/kg		PS6D-50	\$106/kg
				PS4D-50	\$78/kg
PC Series	PC7D-50	\$181/kg	ABS Series	ABS6D-10	\$63/kg
	PC7D-30	\$136/kg		ABS6D-20	\$86/kg
	PC7D-20	\$113/kg		ABS7D-50	\$173/kg
	PC-SB-8C-50	\$132/kg		ABS6D-50	\$121/kg
	PC-RR-7-50	\$128/kg		ABS-SB-8C-50	\$127/kg
	PC-RO-7-50	\$128/kg		ABS-RR-7-50	\$124/kg
	PC-PLP-6-50	\$125/kg		ABS-RO-7-50	\$125/kg
		ABS-PLP-6-50		\$123/kg	



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Interpretation

This is what the various Letters and Numbers in each model refers to.

Take for example **PP7D-50**

PP refers to the Plastic Type.

7 refers to the Powder Grade

D refers to the particle size of the powder used

50 refer to the percentage amount of powder.

Luminous Plastic Master Batch Production Instructions

Here we will proceed to explain how to produce your own Master Batch. The Master Batches mentioned above were produced in this manner. You could use the Master Batches above for direct production of Luminous Plastic Products or use the following instructions to produce your own Master Batch for production of Plastic Luminous Products. Advantages of mixing your own Plastic Master Batches is that you can produce it in grades and colors we do not carry

Materials Needed

1. Use a suitable Clear Plastic Resin.
Better to choose a high grade Resin in Powder Form.
2. Use a suitable Luminous Pigment (Glow Powder)
Small mesh size of 'C' (20~40) or 'D' (10~15) is recommended
3. Use a suitable lubricant
Use Sklero adogen42 for Polyolefin Resins like (PE, PP)
Fatty acids such as fatty acid magnesium and fatty acid zinc should be used for resins like (ABS, PS, PC, AS, PMMA)
4. Use a suitable dispersant
PE Wax is recommended for dispersing the Luminous Pigment (powder) and improving the hue.
5. Use a coupling agent
Before adding Luminous Pigment into the Resin, you should add a coupling agent. This improves the dispersion and aids in the bonding.
6. Use a suitable Anti Oxidant Type Stabilizer



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1) Equipment Preparation

1. Use equipment with small ribbon width. If this is not possible, increase the temperature of the conveyor segment and raw material feeding segment by 2~3° centigrade.
2. Rotation speed of the main equipment should be about 15 to 20% higher than normal.
3. Do not cut grind, cut or rub the Luminous Pigment during mixing.
4. Use equipment with ceramic or plastic interiors.

2) Demonstration.

We will now proceed to demonstrate how **PP6-10** was produced.

1. Equipment

As Mentioned above under Equipment Preparation

2. Dispensation Formula

- | | |
|--------------------------------------|------------|
| a. Clear Plastic Resin | 1000 grams |
| b. Luminous Pigment (LG-7D) | 111 grams |
| c. Sklero Adogen42 | 2 grams |
| d. Titanic Fatty Acid coupling agent | 1.4 grams |
| e. PE Wax | 20 grams |
| f. AT168 and AT1010 | |

3. Other Conditions

- a. Temperature (°C)

1	2	3	4	5	pro w
208	210	212	214	215	215

- b. Mainframe frequency at 15. (no more than 30)

4. Glowing effect for Luminous Plastic

Time in Minutes	1	5	10
Brightness (mcd/m ²)	996	273	142



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PHOTO LUMINESCENT UNIVERSAL PLASTIC MASTERBATCH SERIES

Photo Luminescent Universal Plastic Master Batch is a new product, developed and improved over 8 years. Unlike the Master Batch Products mentioned above, which are already pre-mixed with plastic resin and can be melted and molded directly, the Universal Master Batch is meant to be mixed into clear plastic resins like PE, PP, PVC, EVA, ABS, PC and more.

Plastic Type	Model	Color	Price in US\$
Universal Plastic Master Batch	UG7D-70	Green	\$222/kg
	UG7-50	Green	\$156/kg
	UG6-50	Green	\$123/kg
	UB6-50	Blue	\$123/kg
	UR6-50	Red	\$123/kg
	UY6-50	Yellow	\$123/kg

Mixing Ratio

By adjusting the ratio of the Photo Luminescent Universal Plastic Master Batch to the Clear Plastic Resin, you can achieve different levels of luminance.

- 5% Ratio
Add 1 kilogram of Photo Luminescent Universal Plastic Master Batch into 9 kilograms of Clear Resin. (PE, PP, PVC, ABS, etc..)
- 10% Ratio
Add 1 kilogram of Photo Luminescent Universal Plastic Master Batch into 4 kilograms of Clear Resin.
- 15% Ratio
Add 1 kilogram of Photo Luminescent Universal Plastic Master Batch into 2.33 kilograms of Clear Resin
- 20% Ratio
Add 1 kilogram of Photo Luminescent Universal Plastic Master Batch into 1.5 kilograms of Clear Resin.



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Material Safety Data Sheet

Section 1. Identity Information

Trade name	Universal Plastic Master Batch
CAS Number	None
Chemical Name	Polymer
Product Type	UG7-50
Formula	
Statement	This Material Safety data Sheet (MSDS) has been prepared in compliance with Tie Federal Osha Hazard Communication Standard 29 CFR 1910. 1200. This product is considered to be a non hazardous substance under that standard.

Section 2. Hazardous Ingredients

Ingredients Gas Number	% ACGIH-TLV	OSHA-PEL
AS Inert Dust (Total)	2mg/m ³	ACGIN-TLV
	3mg/m ³	OSHA-PEL

Section 3. Physical Data

Appearance	Light Green. No Odor
Melting Point	80° C
Vapor Pressure	N / AP
Vapor Density	N / AP
Solubility in Water	Insoluble
Weight per cubic meter	2.5 – 3.0
Flammability Class	N / AP
Extinguishing Media	Water
Specific Gravity	2.5 – 3.0
Freezing Point	N / AP
Percent Volatile	N / AP
Evaporation Rate	N / AP
PH (% in water)	N / AP
Flash Point	N / AP
Auto Ignition Temp	N / AP
• Fire Fighting Procedure – Special	

Phone: (65) 6287 3059, Fax: (65) 6234 4402
Web Site Address: <http://www.glo-net.com/>



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- Fire Fighters should wear self-contained breathing apparatus when fighting chemical fires.
- Use water to cool containers and structures exposed to fire
- Unusual fire and explosion hazards
- This product will not burn.
- Use appropriate techniques to fight surrounding fire.

Section 4. Reactivity Data

Stability	Stable
Hazardous Polymerization	Will not occur
Conditions to avoid	Contact with Acids
Incompatibility	Contact with Acids
Hazardous Decomposition Products	Will not occur

Section 5. Health Hazard

Respiratory Equipment	Local Exhaust/Mechanical (General)
Protective Gloves	Plastic or Neoprene
Eye Protection	Chemical Glasses
Ventilation	Well Ventilated
Other Protective Equipment	Lab Coat
Threshold Limit Value	OSHA, PEL Total Dust 3mg/m ³
Primary routes of exposure	Inhalation, Ingestion, Skin
OSHA PEL	3mg/m ³
ACGIN TLV	2mg/m ³
Effects of Exposure	May cause irritation to eyes, skin and mucous membrane
Listed Carcinogen	None

Section 6. Emergency and First Aid Data

Skin	Wash off with soap and water
Eyes	Flush with water for 5 minutes
Inhalation	Take deep breaths of fresh air
Ingestion	Drink lots of water and induce vomiting.

Section 7. Toxic Information

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This product is non-toxic. Please contact the manufacturer for further information.

Section 8. Spillage or Leakage Procedure

Spillage Procedure Wear appropriate protective equipment. Avoid stirring up the dust. Vacuum or shovel the material and place in sealed containers for disposal.

Waste Disposal Dispose in accordance with state and local regulations

Section 9. Regulatory Information

SARA TITLE III

Toxic Substance Control Act (TSCA):

All ingredients in this product are listed on the U.S. EPA TSCA Inventory OF Chemical Substances.

Section 10. Special Precautions for Industrial users.

Storage and Handling Store in a cool and dry area. Wear protective clothing and respiratory equipment when handling. Avoid airborne particles.

Other Precautions Perform regular housekeeping to ensure cleanliness.

Section 11. Addendum

Definitions and Abbreviations.

ACGIH	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
CAS	CHEMICAL ABSTRACT SERVICE REGISTRY NUMBER
EPA	ENVIRONMENTAL PROTECTION AGENCY
N / AP	NOT APPLICABLE
N / AY	NOT AVAILABLE
NOISH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL	PERMISSIBLE EXPOSURE LIMITS
SARA	SUPERFUND AMMENDMENTS AND REAUTHORIZATION ACT

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