

STABIACE **HT series**

Synthetic Hydrotalcite

Sakai Chemical Industry Co., Ltd.
Plastic Additives Sales Department

Additives for plastic resins

STABIACE HT-1

Chemical Composition	$\text{Mg}_4\text{Al}_2(\text{OH})_{12}(\text{CO}_3)\cdot 3\text{H}_2\text{O}$ (Basic Magnesium, Aluminum Carbonate Hydrate)
CAS No.	11097-59-9
Major Use	Heat stabilizer for PVC and other halogen-containing polymers
Features	<ol style="list-style-type: none">1. High heat stability (High heat-resistant type)2. High transparency3. No deterioration of insulating features of resins4. Good Dispersibility and no blooming5. Nontoxicity

Additives for plastic resins

STABIACE HT-7

Chemical Composition	$Mg_{3.5}Zn_{0.5}Al_2(OH)_{12}(CO_3) \cdot 3H_2O$ (Basic Magnesium, Zinc and Aluminum Carbonate Hydrate)
CAS No.	169314-88-9
Major Use	Heat stabilizer for PVC and other halogen-containing polymers
Features	<ol style="list-style-type: none">1. High heat stability(Low coloring type)2. High transparency3. No deterioration of insulating features of resins4. Good Dispersibility and no blooming5. Nontoxicity

Additives for plastic resins

STABIACE HT-P

Chemical Composition	$\text{Mg}_{4.5}\text{Al}_2(\text{OH})_{13}(\text{CO}_3) \cdot 3.5\text{H}_2\text{O}$ (Basic Magnesium, Aluminum Carbonate Hydrate)
CAS No.	11097-59-9
Major Use	Heat-retaining agent for agricultural films Neutralizing agent for PP, PE, etc.
Features	<ol style="list-style-type: none">1. Excellent feature of acid-absorption in polymers2. High transparency3. Good Dispersibility and no blooming4. Nontoxicity

Powder Properties and Application

Technical Information

Name of Product	Unit	STABIACE HT-1	STABIACE HT-7	STABIACE HT-P
Chemical Composition	—	$Mg_4Al_2(OH)_{12}CO_3 \cdot 3H_2O$	$Mg_{3.5}Zn_{0.5}Al_2(OH)_{12}CO_3 \cdot 3H_2O$	$Mg_{4.5}Al_2(OH)_{13}CO_3 \cdot 3.5H_2O$
Appearance	—	White Powder	White Powder	White Powder
Specific Surface Area (BET)	m ² /g	6-12	5-11	8-14
Particle Size (150μm Pass)	%	100	100	100
Loss on Drying (105 ° C, 2 hr.)	%	< 0.5	< 0.5	< 0.5
Refraction Index	—	1.50 – 1.52	1.49 – 1.51	1.50 – 1.52
Beginning Temp. of Removing Crystallization Water	° C	Approx. 190	Approx. 190	Approx. 190
Applicable Resin	—	Resin including halogen	Resin including halogen	PP, PE
Example of Using	—	heat-resistant agent (high heat-resistant type)	heat-resistant agent (low coloring type)	Neutralizing Agent Heat-Retaining Agent
POPL No.	—	[B] NJ – 4737	[B] NJ – 4738	[B] NJ – 4737
JHPA No.	—	C-4-(17)		

These values are on one analysis condition and don't be guaranteed.

Heat-retaining Property

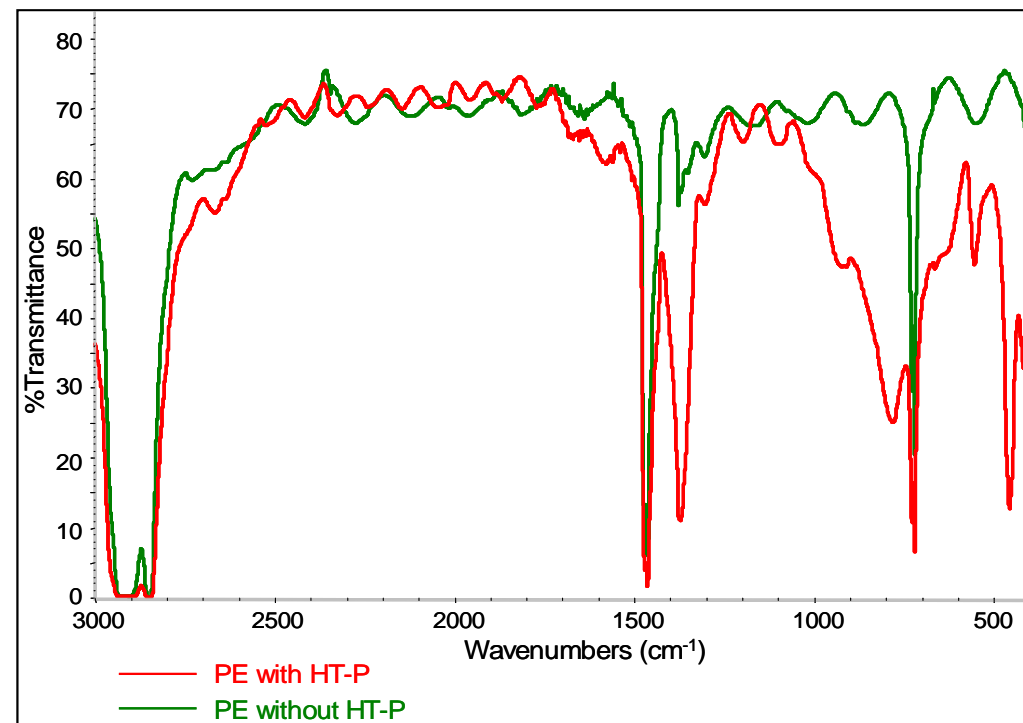
Hydrotalcites have infrared-absorbing ability. When they are added to agricultural PVC/ PE/ EVA films, heat-retaining property of these films is increased. Right-hand FT-IR spectra is PE films with 6.5 wt% HT-P and without HT-P.

Excellent Transparency

The reason is that the refractive indexes of hydrotalcites are almost as same as films itself, 1.5 .

Good Dispersibility

HT-series is treated the surface by higher fatty acid, and the median particle size is about 0.5 μm . Therefore, HT-series is mixed with films well.



FT-IR spectra of
PE films with 6.5 wt% HT-P and without HT-P
(film thickness: 50 μm)

Application for Neutralization Agent

Technical Information

Features

Compared to calcium stearate which is used as neutralization agent too, HT-P is effective at low doses.

HT-P doesn't cause problems in using calcium stearate(bleeding of stearic acid, moisture absorption by CaCl₂).

Evaluation of the degree of inactivation of residual acid materials

Less change of weight of iron test pieces (by oxidation) shows higher neutralization effect.

	Unit	Blank (non-stabilized PP)	HT-P			Calcium Stearate
Addition amount	ppm	–	100	300	500	1000
Weight before test	g	14.5195	14.6738	14.9310	14.4316	14.8497
Weight after test	g	14.5329	14.6741	14.9311	14.4317	14.8499
Increment of weight	g	0.0134	0.0003	0.0001	0.0001	0.0002
	%	0.0922	0.0020	0.0007	0.0007	0.0013
Photos of test pieces	–	