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PROCESS AIDS

PROAID® AC-12

PRODUCT DESCRIPTION:

Proaid AC-12 is a blend of high molecular weight aliphatic fatty acid esters bound to chemically inert fillers designed to act as a processing aid for all natural and synthetic rubber compounds. Proaid AC-12 reduces compound viscosity and improves mold flow (especially transfer and injection) and release from all metal surfaces without affecting cured physical properties.

TYPICAL PROPERTIES:

Appearance.....	off-white flakes
Specific Gravity	1.20
Melt point range.....	55°C-65°C
Ash	20%
% Moisture.....	10%

APPLICATIONS:

The dosage for Proaid AC-12 is 2 to 8 phr, depending on the polymer and the process. Use the higher levels in non-black loaded compounds and in those applications where maximum flow is required. All materials used in the manufacture of this product have previously been approved for food contact by the FDA (per CFR 21 177.2600).

Proaid AC-12 may be used:

- To reduce mold fouling
- To improve mold filling and cured part finish
- To improve flow characteristics in injection and extrusion equip.
- To improve release from molds, mills and internal mixers
- To improve dispersion of fillers during mixing (add early in mix)

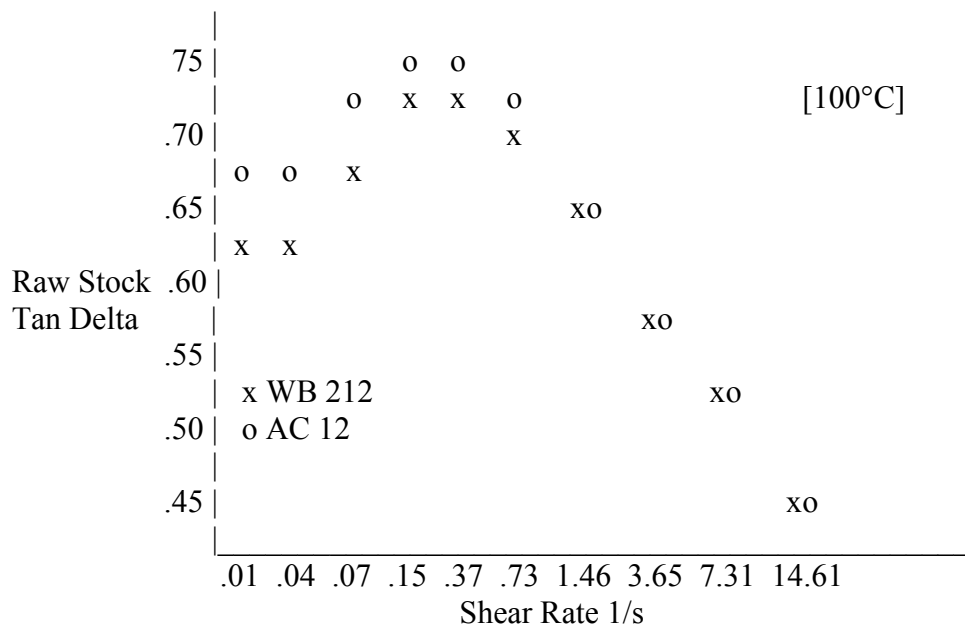
Proaid AC-12 vs Struktol WB 212

In the Monsanto Capillary Rheometer Test processability of a stock can be measured by the tan delta of the uncured stock. This is essentially measuring the reduced nerve of a stock (denoted by a higher

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tan delta result) caused by the process aid. In the study below, 8 phr of WB212 and Proaid AC12 were added to an EPDM compound (8 phr was chosen to maximize the process aids' effects). The tan delta (higher tan delta of raw stock indicates lowering of nerve) results are quite close with AC12 being slightly better throughout the shear range up to the highest shear ranges where the tan delta results are essentially equal:



Shear Rate	Tan Delta	
	(AC12)	(WB212)
.01	.661	.633
.04	.672	.653
.07	.709	.671
.15	.726	.711
.37	.728	.709
.73	.701	.684
1.46	.646	.645
3.65	.582	.579
7.31	.521	.523
14.61	.444	.456

SHIMADZU FLOW TEST: The Shimadzu tests stock flow rate as well as flow volume:

	<u>PROAID AC-12</u>	<u>STRUKTOL WB212</u>
Flow Rate (cm ³ /s x 102)	1.262	1.171
Flow Volume (gm/10 min)	8.332	7.730