

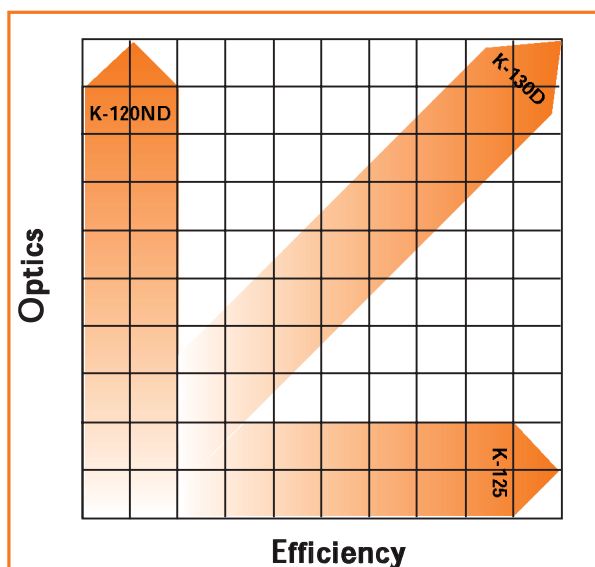


PARALOID™ K-130D

Improved Lower-Dusting Processing Aid for Vinyl

PRODUCT DESCRIPTION

PARALOID K-130D processing aid is an acrylic polymer from Rohm and Haas that combines the clarity of PARALOID K-120ND processing aid with the processing efficiency of PARALOID K-125 processing aid in Vinyl formulations.



These test results demonstrate the performance of PARALOID K-130 processing aid in various formulations and applications.

PHYSICAL DESCRIPTION

Chemical Description: Acrylic polymer-based compound

Appearance: Free-flowing white powder

Bulk Density: 0.39 - 0.49

Clarity

PARALOID K-130D processing aid provides excellent clarity in Vinyl formulations.

FORMULATION

Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-404ER	1.50
ADVALUBE F-1040L	0.50
Oxidized Polyethylene	0.20
PARALOID K-130D Processing Aid	2.00

Conditions

Two-roll mill:

Roll temps.: 350°F (177°C)

Roll speeds: 26 rpm (front)
20 rpm (back)

Milling time: 3.5 minutes

Press:

Temp.: 350°F (177°C)

Pressing time and pressure: 3 minutes at 10 tons
2 minutes at 90 tons

OPTICAL PROPERTIES - HUNTERLAB 0.125" PLAQUES

Processing Aid	Y	L	a	b	Total YI	% Haze
K-130D	88.5	94.1	-0.7	3.6	6.2	4.2
K-120ND	88.2	93.9	-0.8	3.5	6.1	4.6

BOTTLE CLARITY

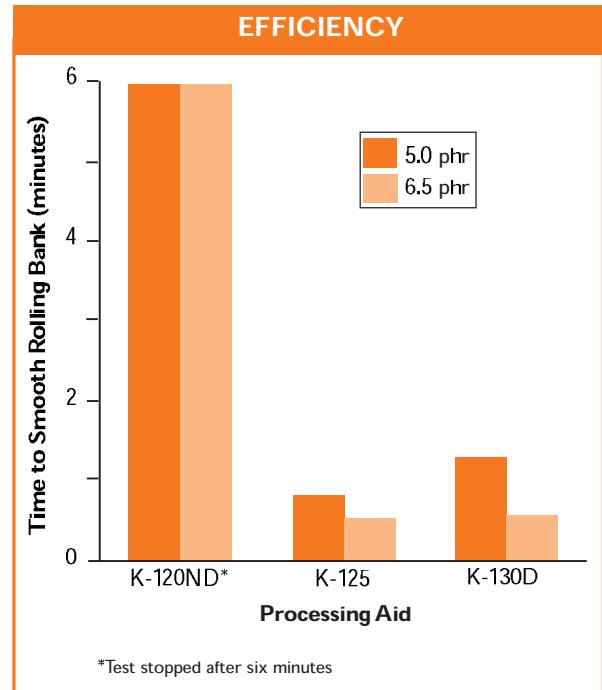
FORMULATION	
Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-404ER	1.50
ADVALUBE F-1040L	0.50
Oxidized Polyethylene	0.20
PARALOID BTA-733 Impact Modifier	13.00
Conditions	
Bekum extrusion blowmolder	
Screw speed:	36 rpm
Cycle time:	0.097 minutes
Melt temp.:	410° – 415°F (210° – 213°C)

.025" BOTTLE WALL		
Processing Aid	Level (phr)	% Haze (HunterLab)
K-130D	0.8	1.8
K-120ND	0.8	1.7
K-130D	1.4	2.1
K-120ND	1.4	1.9
K-130D	2.0	2.0
K-120ND	2.0	2.3

EFFICIENCY

The superior efficiency of PARALOID K-130D processing aid enables the use of lower levels of processing aid while still obtaining optimum processability.

EFFICIENCY	
Formulation	
Ingredient	Level (phr)
Vinyl (K=67)	100.00
ADVASTAB™ TM-181 Tin Stabilizer	2.0
Stearic Acid	0.5
Please note the high molecular weight Vinyl used to exaggerate the difficulty of obtaining a smooth rolling bank.	
Conditions	
Two-roll Mill:	
Roll temps.:	350°F (177°C)
Roll speeds:	26 rpm (front) 20 rpm (back)
Gap setting:	0.006" (0.15mm)

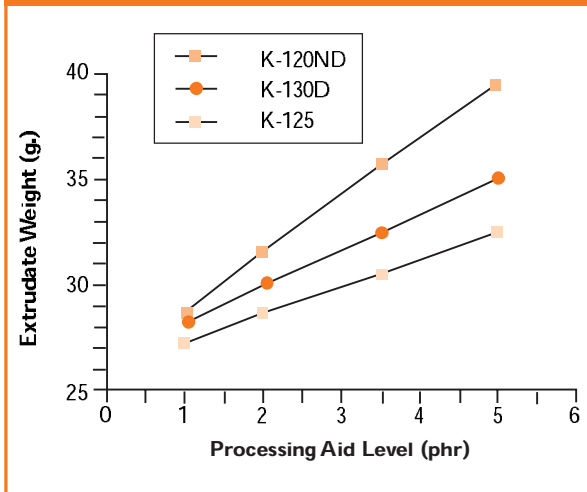


DIE SWELL AND MELT VISCOSITY

PARALOID K-130D processing aid promotes an optimum balance of die swell and melt viscosity to give better cost performance in blow-molding.

FORMULATION	
Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-181 Tin Stabilizer	2.0
ADVALUBE F-1005 Lubricant	0.5
Oxidized Polyethylene	0.2
Conditions	
Haake 3/4" extruder	
Melt temp.:	392°F (200°C)
Screw speed:	40 rpm

EXTRUDATE WEIGHT VS. PROCESSING AID CONCENTRATION



BLOWMOLDING OUTPUT AND BOTTLE WEIGHT

Low levels of PARALOID K-130D processing aid provide good melt strength and high output efficiency in Vinyl bottle applications.

FORMULATION

Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-404ER	1.50
ADVALUBE F-1040L Lubricant	0.50
Oxidized Polyethylene	0.20
PARALOID BTA-733 Processing Aid	13.00
Irisol 'N' (1% in Vinyl)	0.06

Conditions	
Bekum extrusion blowmolder	
Screw speed:	36 rpm
Cycle time:	0.097 minutes
Melt temp.:	410° – 415°F (210° – 213°C)

BEKUM BLOWMOLDER PROCESSING EVALUATION

Processing Aid	Level (phr)	Time to Floor (sec)	Weight (g.)	Bottle Weight (g.)
K-130D	0.8	13.2	110.9	28.0
K-120ND	0.8	12.4	105.5	26.8
K-130D	1.4	15.2	119.2	31.5
K-120ND	1.4	13.0	110.4	28.5
K-130D	2.0	16.1	132.2	35.1
K-120ND	2.0	16.1	119.1	32.3

DISPERSION

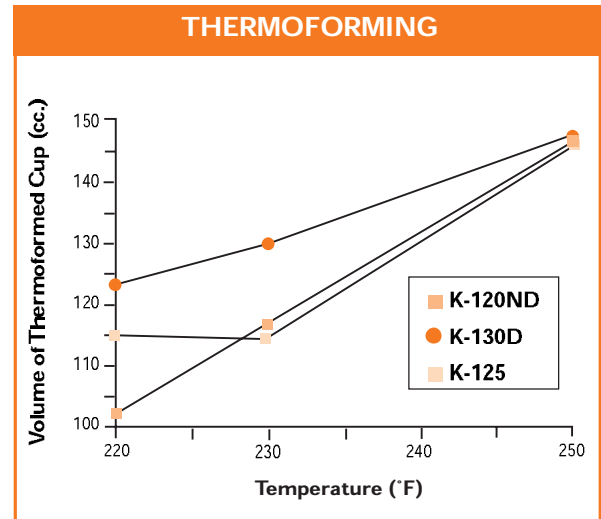
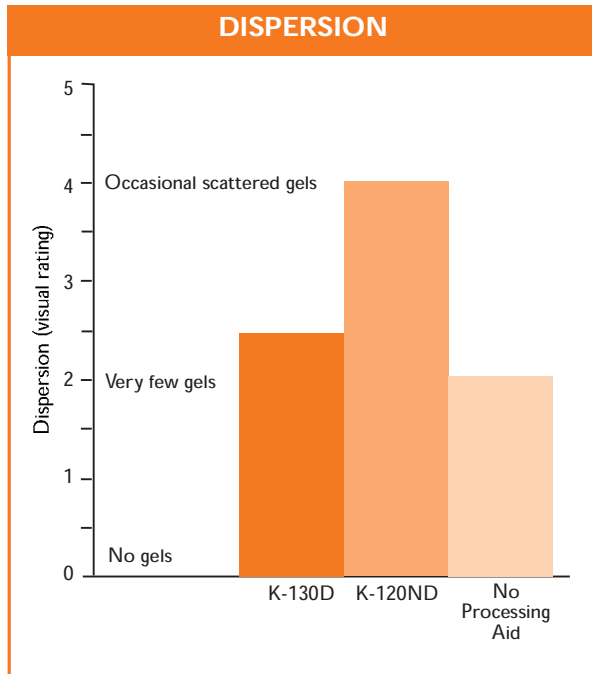
PARALOID K-130D processing aid shows excellent dispersion in Vinyl formulations.

DISPERSION

Formulation	Level (phr)
Ingredient	
Vinyl (K=67)	100.00
ADVASTAB TM-181 Tin Stabilizer	2.0
DIDP	50.0
Epoxidized Soybean Oil	5.6
PARALOID K-130D Processing Aid	10.0

Conditions	
Two-roll mill:	
Roll temps.:	325°F (163°C)
Roll speeds:	26 rpm (front) 20 rpm (back)
Milling time:	1 min: 45 sec.

This formulation and these milling conditions are designed to exaggerate dispersion problems in typical rigid and plasticized Vinyl compounds.



THERMOFORMING

PARALOID K-130D processing aid gives higher melt strength for more detailed thermoforming at lower temperatures.

FORMULATION

Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-181 Tin Stabilizer	1.5
ADVALUBE F-1005 Lubricant	0.9
Oxidized Polyethylene	0.2
ADVALUBE E-2100 Lubricant	0.25
PARALOID K-175 Processing Aid	1.5
PARALOID BTA-733 Impact Modifier	12.0
PARALOID K-130D Processing Aid	2.0

Conditions
.030" milled/molded plaques were thermoformed using a Precision Quincy oven and a single cup Vacuum Detail mold. Oven cycle time was 90 seconds.

FUSION/MELT VISCOSITY

PARALOID K-130D processing aid combines fast fusion/melt output for calendering applications with the low melt viscosity of PARALOID K-120ND modifier.

FORMULATION

Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-181 Tin Stabilizer	1.50
ADVALUBE F-1005 Lubricant	0.50
Oxidized Polyethylene	0.20

Conditions
Brabender Plasticorder:

Rotor speed:	45 rpm
Bowl temp.:	320°F (160°C)
Charge weight:	57 g.

BRABENDER FUSION EVALUATION

Processing Aid	Level (phr)	Time (sec)	Torque (mg.)	Temp. (°C)
K-130D	0.8	108	3994	172
K-120ND	0.8	110	3809	173
K-130D	1.4	94	4537	170
K-120ND	1.4	100	4072	171
K-130D	2.0	78	4481	172
K-120ND	2.0	102	4162	172

BRABENDER FUSION EVALUATION EQUILIBRIUM

Processing Aid	Level (phr)	Time (sec)	Torque (mg.)	Temp. (°C)
K-130D	0.8	8:00	2739	171
K-120ND	0.8	8:00	2677	171
K-130D	1.4	8:00	2750	173
K-120ND	1.4	8:00	2778	171
K-130D	2.0	8:00	2834	172
K-120ND	2.0	8:00	2840	171

HEAT STABILITY

PARALOID K-130D processing aid has superior dynamic heat stability.

FORMULATION

Ingredient	Level (phr)
Vinyl (K=58)	100.00
ADVASTAB TM-181 Tin Stabilizer	1.50
ADVALUBE F-1005 Lubricant	0.50
ADVALUBE E-2100 Lubricant	0.20
PARALOID K-130D Processing Aid	2.25

Conditions
Haake Rheocord:

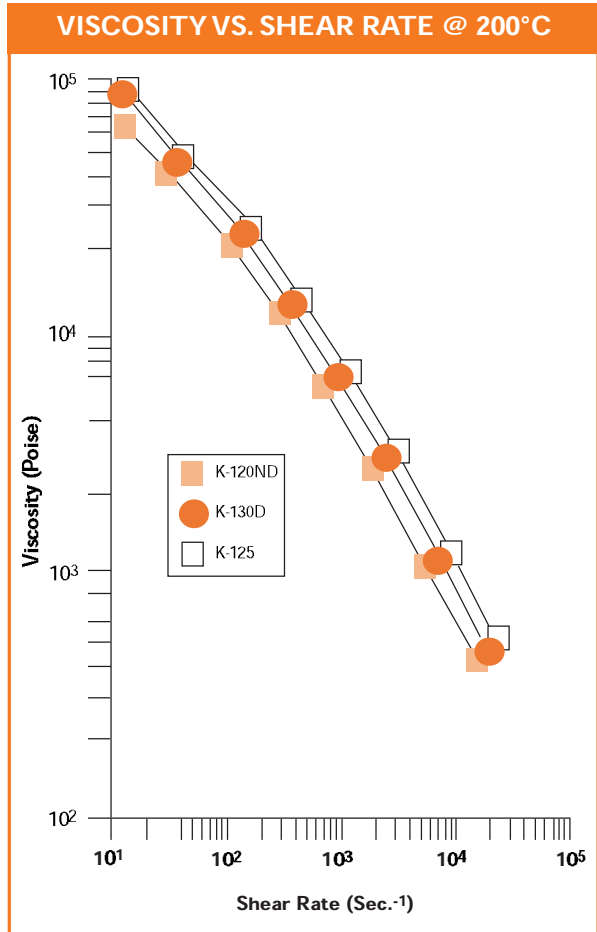
Bowl temp.:	374°F (190°C)
Rotor speed.:	60 rpm
Charge weight:	60 g.

DYNAMIC HEAT STABILITY - HAAKE BOWL ONSET OF DEGRADATION

Processing Aid	Time (min.)	Torque (mg.)	Temp. (°C)
K-130D	23.4	1256	203
K-125	19.8	1277	204
K-120ND	22.1	1256	201

VISCOSITY

PARALOID K-130D processing aid maintains low melt temperatures and viscosity at high shear rates for more output and higher speed processing.



STANDARD PACKAGING

The standard package is either a unitized pallet of 50 x 50 lb. bags (2500 lb. net) or a unitized pallet of 2 x 1000 lb. bags (2000 lb. net). Please check with your account representative for specific package availability as some packages are dependent upon density and demand of material.

STORAGE AND HANDLING

(see MSDS for details)

Standard recommended storage conditions are as follows:

- Store indoors, protected from weather (moisture)
- Temperature should not exceed 140°F
- Protect from ultraviolet light
- With stretch hood or stretch wrap intact (if applicable)

Unopened (if material is opened, it should not be left exposed and should be used within one month); ambient temperature preferred.

When stored correctly in the original packaging, the shelf life is:

2.5 years from date of manufacture

SAFE HANDLING INFORMATION

Avoid high concentrations of dust in air and accumulation of dust on equipment. An airborne dust of this material can create a dust explosion. When handling and processing this material, local exhaust ventilation may be required to control dust and reduce exposure to vapors. To prevent dust explosions, employ bonding and grounding for operations capable of generating static electricity. Dispose of by placing powder or pellets in air tight bags. Incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

MATERIAL SAFETY DATA SHEETS (MSDS)

Material Safety Data Sheets are available outlining hazards and safe handling methods. Contact Rohm and Haas for copies of the MSDS for this product and for other handling information.

ABOUT ROHM AND HAAS PLASTICS ADDITIVES...

Rohm and Haas Plastics Additives is a worldwide supplier of additives and acrylic resins used in a large variety of applications for Vinyl, polyester, polycarbonate and other engineering plastics or blends. Products from Rohm and Haas Plastics Additives impart significant performance attributes like impact strength, clarity, chemical resistance, color retention, heat resistance, heat stability and weatherability. They also provide important processing benefits like greater output rates, melt strength and lubrication.

For nearly half a century, Rohm and Haas Plastics Additives has been a pioneer in the development of plastics additives, introducing in 1956 the first MBS impact modifier.

Two years later, Rohm and Haas Plastics Additives introduced the first processing aid and in 1968, the company developed the first all-acrylic impact modifier.

Today, Rohm and Haas Plastics Additives is the leading provider of processing aids, impact modifiers and stabilizers to the Plastics Industry worldwide.

**ROHM AND HAAS PLASTICS ADDITIVES
SOLUTIONS PROVIDER PRODUCT RANGE**

ACRYLIGARD™	Weatherable Acrylic Capstock Resins CS-100 Series: Weatherable Capstock Resins with Gloss Reducer CS-200 Series: Weatherable Capstock Resins
ADVALUBE™	Specialty Lubricants F-1000: Internal Lubricants E-2000: External Lubricants B-3000: Balanced Lubricants
ADVAWAX™	Specialty Waxes 200 Series: Balanced Lubricants for Broad Process Window in Extrusion and Injection Molding
ADVASTAB™	Thermal Stabilizers TM-Series: TGA-based and Reverse Ester Stabilizers
ADVAPAK™	Stabilizer/Lubricant One-Packs S-1000: Methyl Tin One-Packs
PARALOID™	Impact Modifiers KM-300 Series: Acrylic Impact Modifiers for Weatherable Vinyl Applications BTA Series: MBS Impact Modifiers for Non-weatherable Vinyl Applications
PARALOID™	Processing Aids K-100 Series: General Purpose Acrylic Processing Aids K-400 Series: High Molecular Weight Acrylic Processing Aids
PARALOID™	Acrylic Multi-functionals and Specialties KM-388/KM-390: Low-Gloss, Wood-Look / Smooth, Satin Finish KM-940: High-Gloss, Fast Fusion, Improved Processability HT-100: Heat Distortion Resistance for Vinyl KF-710: For Matte Appearance in Vinyl
PARALOID EXL™	Additives for Engineering Resins EXL-2300/3300 Series: Acrylic Impact Modifiers for Engineering Resins EXL-2600/3600 Series: MBS Impact Modifiers for Engineering Resins EXL-5136: Gloss Reducer for Engineering Resins
VINYZENE™	Antimicrobials for Plasticized Vinyl, TPU, PU, TPE, Rubbers, Polymeric Alloys Active Ingredient: DCOIT in Liquid and Solid Carriers Active Ingredient: OBPA in Liquid and Solid Carriers Active Ingredient: OIT in Liquid and Solid Carriers



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