



PARALOID™ K-175 Lubricating Processing Aid

Description

PARALOID™ K-175 Lubricating Processing Aid is an acrylic styrene co-polymer that functions as a lubricating processing aid by combining the performance of a processing aid and an external lubricant into one co-polymer. It gives improved hot melt metal release, especially for high shear processing where alternatively, higher levels of external lubricants might be required. However it does so without their drawbacks of increased plateout. It is refractive index matched to PVC, giving excellent clarity, replacing external lubricant that can contribute to higher haze levels.

Applications

PARALOID™ K-175 Lubricating Processing Aid is particularly designed to improve the processability in rigid PVC extrusion applications such as siding, window profile, pipe/conduit and foam core pipe, foam sheet and profile, by improving the hot melt to metal release properties. It improves roll release in calendering, and mold flow and release in injection molding applications

Regional Product Availability

- North America
- Latin America

Product Description

Chemical Description	Acrylic Styrene co-polymer
Physical Appearance	White, free-flowing powder
Specific Gravity (g/cm ³)	1.05
Refractive Index (n _d , 25°C)	1.519

Key Attributes

- Excellent clarity and thermal stability / resistance to shear burning in PVC
- Superior extrusion processing behavior in terms of fusion, metal release and smooth extrudate surface
- Allows for reduction of external lubricants that can cause plateout
- Listed product in TR-2 PPI Range Composition Listing of Qualified Ingredients
- Compliant with US FDA regulation 21CFR178.3790 (food contact)

Stability and Two Roll Mill Release

Table 1. Brabender stability time and time to stick on 2 roll mill, 196°C

PARALOID™ K-175 Loading Level (phr)	0 phr	3 phr
Dynamic Thermal Stability Time (minutes)	24	49
Time to Stick on 2 Roll Mill at RPMs shown (front/back)	Poor Release	Excellent Release
20/20 rpms, (minutes)	13.5	30
30/20 rpms, (minutes)	11	25
40/20 rpms. (minutes)	8	33

Optical Properties
Table 2. Clarity and Color Properties

PARALOID™ K-175 Loading Level (phr)	0 phr	3 phr
White Light Transmission (%)	87.5	87.0
Haze (%)	6.9	4.0
Color at 3 Minutes on Mill	Dark Yellow	Light Yellow

Test Formulation
Table 3. PVC Packaging and Siding Formulations

	Packaging, K61 PVC	Siding, K66 PVC
PVC	100	100
Thermal Stabilizer	2	1
Internal Ester Lubricant (GMS)	0.8	---
External Ester Lubricant (PEAS)	0.2	---
Calcium Stearate	---	1.3
Paraffin Wax	---	1
TiO ₂	---	10
PARALOID™ KM-377 Impact Modifier	---	5
PARALOID™ K-175 Lubricating Processing Aid	0 or 3	0, 0.5 or 1

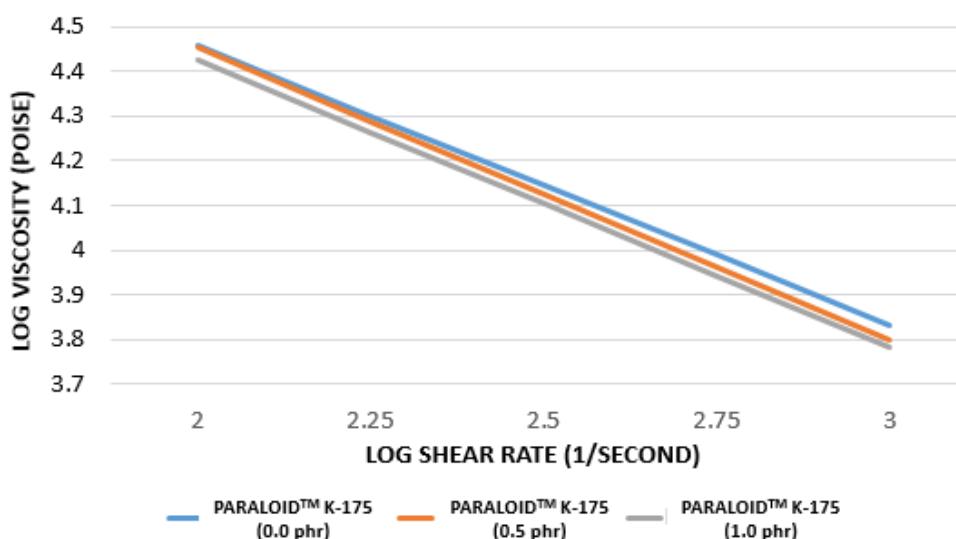
Capillary Rheology,
Shear Viscosity
**Capillary Rheology, 200°C, Siding Cap Layer
Log Viscosity vs. Log Shear Rate, by phr**


Figure 1. Viscosity shows slight decrease as PARALOID™ K-175 Lubricating Processing Aid level is increased, indicating minimal effect on flow properties, e.g. in complex profile dies.

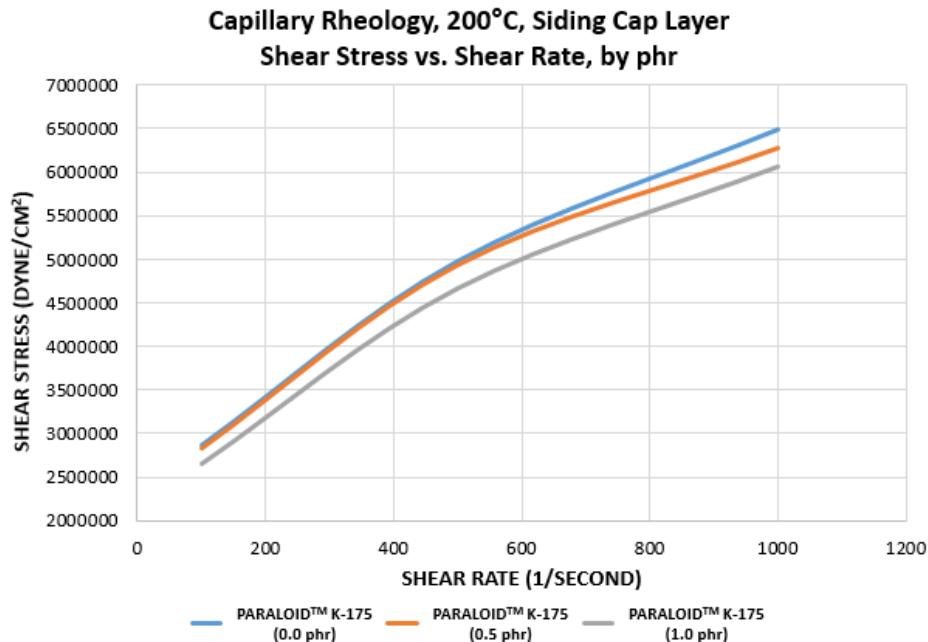
**Capillary
Rheology,
Shear Stress**

Figure 2. Shear stress reduces as PARALOID™ K-175 Lubricating Processing Aid level is increased, showing a higher resistance to melt fracture.

**Product
Packaging**

The standard package is either a unitized pallet of 20-25 kg bags or 500-900 kg super sacks/big bags/FIBC bags.

Please consult a Dow representative for specific package availability for this product.

**Quality
Management
System**

The Dow Chemical Company (Dow) and its subsidiaries have implemented a comprehensive quality management system pursuant to Good Manufacturing Practices (GMP) and various quality management standards including ISO 9001. An overview of **The Dow Quality Management System Manual** can be obtained at the following Internet web site – <http://www.dow.com/en-us/about-dow/our-company/beliefs-and-culture/quality-culture>. As part of that system, the Dow Plastics Additives business maintain ISO 9001 registration for most of our manufacturing plants. A copy of these certificates available upon request.

**Storage and
Handling
Precautions**

Store unopened in original packaging at ambient temperature. If material is opened, it should not be left exposed and should be used within one month. When stored correctly in the original packaging, the shelf life is 3 years from date of manufacture.

Before using this product, consult the Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage. Contact Dow for copies of the SDS and for more information on this product. Information contained in a TDS document cannot substitute a SDS.

**Disposal
Considerations**

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

**Medical
Applications
Restrictions**

Dow prohibits sale into certain medical applications. Please check with Dow if you believe your application could be in violation of this policy.



Technical Data Sheet

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. The customer is solely responsible for determining the suitability of the Dow product for the uses contemplated by customer. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow and available online at www.dow.com.

Regulatory Information

Contact information:

If you should have any questions regarding this notice, please contact your local Dow Representative or www.dow.com/contact

If your application includes a sensitive application such as food contact or drinking water requirements or if you need other regulatory information, please contact your local Dow representative.

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