

PINECRYSTAL SERIES



1. Introduction

Pinecrystal is a series of products that consist of colorless rosin and rosin derivatives. The products are unique to the marketplace and can be used in a variety of adhesives including UV curable PSA's, double-sided PSA for electronics and automotive materials, hot melt, soldering fluxes, and specialty printing.

2. Specifications

Product	Type	Color: Typical (Hazen)	Color: Spec (Hazen)	Acid Value	Softening Point
KE-604	Colorless high acid value and high softening point modified rosin	120	300 max	230-245	124-134
KR-610	Colorless hydrogenated rosin	60	150 max	165-175	80-87
KE-100	Colorless rosin ester	110	200 max	2-10	95-105
KE-311	Colorless hydrogenated rosin ester	40	150 max	2-10	90-100
KE-359	Colorless hydrogenated rosin ester	50	150 max	10-20	94-104



Gum Rosin

Pinecrystal



Arakawa Chemical (USA) Inc.
625 N. Michigan Ave. Suite 1700
Chicago, IL 60611 USA

3. Thermal Stability (in Gardner scale)

Time (200°C)	Pinecrystal KE-604 (180°C)	Pinecrystal KR-610	Pinecrystal KE-100	Pinecrystal KE-311	Pinecrystal KE-359
0h	<1	<1	<1	<1	<1
2h	<1	<1	<1	<1	<1
4h	1-2	<1	<1	<1	<1
6h	2-3	1	<1	<1	1
8h	3-	1-2	<1	<1	1+
24h	6+	4+	3	1-2	5-6

-A 10g of resin in a test tube was placed in an air circulating oven kept at 200°C

4. Specialty Applications

Pinecrystal KE-311- Used in medicated adhesive patches (including transdermal patches and pain/itch relief), UV Curable PSA, Double-sided PSA for electronic materials

Pinecrystal KE-100- Used in medical adhesive patches, specialty inks

Pinecrystal KE-359- Used in PSA film label, double-sided PSA for electronic materials and automobiles

Pinecrystal KE-604- Soldering Flux

Pinecrystal KR-610- Soldering Flux and hot melt adhesive

5. Specific Benefits

Overall- Colorless and transparent, excellent heat stability

Pinecrystal KE-311- Has a track record in medical uses

Pinecrystal KE-100- Has a track record in medical uses

Pinecrystal KE-359- Has a high hydroxyl value, high peel strength for acrylic PSA

Pinecrystal KE-604- Has a high acid value, good solubility in polar solvents such as glycol ether and alcohol

Pinecrystal KR-610- Light color

6. Packaging:

55.115LB (=25KG) net in paper bag, 40 bags per wooden skid