

KURARAY POVAL™ for Suspension PVC Technical Data Sheet

Characteristics

Specialty polyvinyl alcohol (PVOH, PVA, Poval) grades with a wide range of degree of polymerization and hydrolysis.

Recommended Uses

Primary or secondary suspending agent for vinyl chloride suspension polymerization.

Supplied in the following form

Colorless to dark yellow, fine granules.

Specifications

Kuraray's quality control team analyzes each lot and releases the correspond data. The measurements are conducted according to ISO 15023-2 and Kuraray's internal standards.

KURARAY POVAL™ Primary suspending agents

Grade name	Viscosity [mPa•s]	Degree of hydrolysis [mol%]	Volatile [%]	Ash [%]	pH
32-80	29.0 - 35.0	79.0 - 81.0	≤5.0	≤0.4	5.0 - 7.0
35-80	32.0 - 38.0	79.0 - 81.0	≤5.0	≤0.4	5.0 - 7.0
40-80 E	37.0 - 45.0	79.0 - 81.0	≤5.0	≤0.4	5.0 - 7.0
48-80	45.0 - 51.0	78.5 - 80.5	≤5.0	≤0.2	5.0 - 7.0
L-8	5.0 - 5.8	69.5 - 72.5	≤3.0	≤1.1	5.0 - 7.0
L-9	5.5 - 6.1	69.5 - 72.5	≤3.0	≤1.1	5.0 - 7.0
L-9-78	6.0 - 6.7	76.5 - 79.0	≤5.0	≤1.2	5.0 - 7.0
L-9P	6.2 - 7.2	71.5 - 73.5	≤3.0	≤0.5	5.0 - 7.0
L-10	5.0 - 7.0	71.5 - 73.5	≤5.0	≤1.1	5.0 - 7.0
L-11	5.5 - 7.5	71.5 - 73.5	≤3.0	≤0.4	5.0 - 7.0
L-508W	6.0 - 7.0	71.5 - 73.5	≤5.0	≤0.4	5.0 - 7.0
44-88	40.0 - 48.0	87.0 - 89.0	≤5.0	≤0.4	5.0 - 7.0
49-88	45.0 - 52.0	87.0 - 89.0	≤5.0	≤0.4	5.0 - 7.0

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55-95	50.0 - 60.0	95.0 - 96.0	≤5.0	≤0.4	5.0 - 7.0
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KURARAY POVAL™ Secondary suspending agents

Grade name	Viscosity [mPa•s]	Degree of hydrolysis [mol%]	Volatile [%]	Ash [%]	pH
LM-10HD	4.5-5.7	38.0 - 42.0	≤3.0	≤0.6	N/A
LM-20	3.0-4.0	38.0 - 42.0	≤3.0	≤1.0	N/A

Preparation of PVOH solution

L grades

KURARAY POVAL™ L grades are partially hydrolyzed polyvinyl alcohols varying in their degree of hydrolysis from 69.5 - 73.5 mol%. Therefore, they are cold water soluble, and solutions can be made either in cold water or with heating.

KURARAY POVAL™ is slowly added to a stirred tank of cold water to avoid lump formation. The product can be passed through a coarse mesh (10 mesh) to catch any extraneous items that may fall into the solution mixer. After adding all the L-grade, the mixture is heated up to 70 - 80 °C with agitation. There should be sufficient agitation in the mixer for efficient dissolution but not too intense to cause foam build up at the surface. Mix for 2 hours or until the solution is homogenous. The solution is then cooled to below the cloud point to obtain a clear solution. The solution concentration can then be checked and adjusted if necessary. Before pumping to the charge vessel or reactor the solution is passed through a 200 microns filter as a final "cleaning process". L-grades exhibit a cloud point, and the prepared solutions have to be stored below the product's cloud point to avoid separation during storage.

80 mol% hydrolysis grades

KURARAY POVAL™ 80 mol% hydrolysis grades are partially hydrolyzed polyvinyl alcohols varying in their degree of hydrolysis from 76.5 - 81.0 mol%. For these grades it is recommended to heat the mixture during dissolving.

KURARAY POVAL™ is slowly added to a stirred tank of cold water to avoid lump formation. The product can be passed through a coarse mesh (10 mesh) to catch any extraneous items that may fall into the solution mixer. After adding all the KURARAY POVAL™, the mixture is heated up to 80 - 90 °C with agitation. There should be sufficient agitation in the mixer for efficient dissolution but not too intense to cause foam build up at the surface. Mix for 2 hours or until the solution is homogenous. The solution is then cooled to below the cloud point to obtain a clear solution. The solution concentration can then be checked and adjusted if necessary. Before pumping to the charge vessel or reactor the solution is passed through a 200 microns filter as a final "cleaning process".

88 mol% and 95 mol% hydrolysis grades

KURARAY POVAL™ 88 mol% and 95 mol% hydrolysis grades are partially hydrolyzed

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polyvinyl alcohols varying in their degree of hydrolysis from 87.0 - 96.0 mol%. As such they are only completely soluble in hot water and solutions can only be made by heating during dissolving.

The KURARAY POVAL™ is slowly added to a stirred tank of cold water to avoid lump formation. The product can be passed through a coarse mesh (10 mesh) to catch any extraneous items that may fall into the solution mixer. After adding all the KURARAY POVAL™, the mixture is heated up to 90 - 95 °C with agitation. There should be sufficient agitation in the mixer for efficient dissolution but not too intense to cause foam build up at the surface. Mix for 2 hours or until the solution is homogenous. The solution is then cooled to room temperature. The solution concentration can then be checked and adjusted if necessary. Before pumping to the charge vessel or reactor the solution is passed through a 200 microns filter as a final "cleaning process".

LM grades

KURARAY POVAL™ LM grades are solid products and are classed as low hydrolysis polyvinyl alcohols varying in their degree of hydrolysis from 40.0 - 50.0 mol%. Therefore, they are not fully water soluble but can be easily dispersed in water.

The KURARAY POVAL™ LM grade is slowly added to a stirred tank of cold water to avoid lump formation. The product can be passed through a coarse mesh (10 mesh) to catch any extraneous items that may fall into the dispersion mixer. There should be sufficient agitation in the mixer for efficient dissolution but not too intense to cause foam build up at the surface. Mix for 1-2 hours or until the dispersion is homogenous. The solution concentration can then be checked and adjusted if necessary. For storage of LM-grade aqueous dispersion, solid content should be less than 5 % and the temperature should be below 40 °C.

Storage

KURARAY POVAL™ can be stored for an unlimited period under appropriate conditions that is in its original packs in closed, dry rooms, at room temperature. Kuraray would recommend that our product is used within 12 months from the shipment date as given on the certificate of analysis.

Industrial Safety and Environmental Protection

Refer to the Safety Data Sheet (SDS) prepared in accordance with the laws and regulations of each country.

Special remarks

Refer to the technical brochure on KURARAY POVAL™ for suspension PVC for more detailed information.



Kuraray Poval™

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2025/03/26

