

Open R&D: Li-PAN · Li-PAA Research Materials

For Universities · Research Institutes · Corporate R&D | Water-Based Ion-Conductive Polymer · Lithium-Neutralized PAA Research Materials

Li-PAN	Li-PAA
CPS-Proprietary Water-Based Ion-Conductive Polymer For Battery · Carbon Material · Interface/Coating Research	PAA-Based Lithium-Neutralized Water-Based Polymer For Binder · Adhesion · Coating · Electrode Research

1. Product Overview

CPS Open R&D materials are water-based polymer platforms provided to universities, research institutes, and corporate researchers for the direct design and evaluation of new electrode, binder, coating, and interfacial functions without limiting the materials to a single end use. Li-PAN and Li-PAA can be evaluated individually or in combination according to the customer's research objectives.

2. Product Portfolio

Product	Form	Typical Characteristics	Research Positioning
Li-PAN	Water-based polymer solution	Highly alkaline stock solution · Ion-conductive functionality	Master material before neutralization/compounding
Li-PAA	Water-based lithium PAA solution	PAA binding characteristics · Water-based processability	Research material for binder · adhesion · coating

3. Key Features

Open Formulation	Researchers can directly design composition, blend ratio, solid content, and pH without being restricted to a specific application
Water-Based Platform	Suitable for water-based material research aimed at reducing the use of organic solvents such as NMP
Li-PAN Master Material	Applicable to neutralization and compounding studies with PAA, CA, and other functional materials
Li-PAA Research Expansion	Enables comparative studies of binder, adhesion, and interfacial properties according to molecular weight and neutralization conditions
CPS Application Support	Initial formulation and evaluation direction can be jointly reviewed according to customer objectives

4. Recommended Research Areas

Research Area	Application Examples	Research Objective
Battery Electrodes	Si-based anodes · Water-based LFP/LMFP cathodes	Binder · additive · interfacial property research
Carbon Materials	Si/C · Activated carbon · CNT · Carbon black	Surface coating · dispersion · interfacial functionalization research
Primer / Adhesion	Al/Cu foil · metals · thin films · hydrophilic substrates	Water-based adhesion · wettability · thin-film coating research
Electrochemical Materials	Water-based electrodes including supercapacitors	Ion transport · adhesion · rate capability/cycle performance research
New Applications	Antistatic · EMI · composite materials, etc.	Customer-idea-driven Open R&D

5. Research Supply & Applications

Li-PAN: Supplied as a master material before neutralization, enabling researchers to design compounding and neutralization conditions with PAA, organic acids, and other functional materials.

Li-PAA: A lithium-neutralized PAA research material applicable to blending with existing water-based binders, evaluation as a standalone binder, and studies of adhesion, coating, and electrode interfaces.

Customized Research: Solid content, viscosity, pH, and blend composition can be discussed and tailored according to the research objective.

Product Positioning | CPS Open R&D polymer platform designed to enable researchers to discover new applications rather than restrict the material to a single predefined use.

6. Handling, Storage & Precautions

- Li-PAN stock solution has an ammonia odor and is highly alkaline. Use appropriate personal protective equipment during handling and avoid prolonged direct contact with alkali-sensitive metals such as aluminum.
- Physical properties may change significantly after pH adjustment or blending depending on the research objective; preliminary evaluation on a small scale is recommended.
- Mix thoroughly before use. Store tightly sealed, away from direct sunlight and high temperatures, and protect from freezing.