

## — TECHNICAL DATA SHEET

# Petroleum Pitch

ETHYLENE-TAR DERIVED · FIVE SOFTENING-POINT GRADES



## Overview PRODUCT OVERVIEW

AOYIDA RefineU® series petroleum pitch is produced from **ethylene tar** with coumarone resin, via raw-material de-ironing, three-vessel cascade polymerization, flash separation of light fractions, and composition tuning — all on a fully-automated, vertically-integrated continuous production line. Five standard softening-point grades cover **145 – 285 °C** (PE-150 / 180 / 200 / 250 / 280), with **QI ≤ 0.5%** and **ash ≤ 0.1%** across the entire range; carbon yield up to **≥ 73 wt%**. **Annual capacity 25,000 t**. The pitch is also the upstream feedstock for AOYIDA carbon fiber and rigid felt — full-chain chemistry and impurity traceability.

## Applications USE CASES

Li-Ion Anode Coating ANODE

Pitch-Based Fiber Precursor FIBER

Graphite Electrode Impregnation IMPREGNATION

C/C Composite Densification C/C

High-Yield Carbon Binder BINDER

### PE-150

Softening Pt.  
145 – 155 °C

### PE-180

Softening Pt.  
175 – 185 °C

### PE-200

Softening Pt.  
195 – 205 °C

### PE-250

Softening Pt.  
245 – 255 °C

### PE-280

Softening Pt.  
275 – 285 °C

# 01 Product Specifications

PHYSICAL & CHEMICAL PROPERTIES / TYPICAL VALUES

## RefineU® Petroleum Pitch • graded by softening point

Parameter	Unit	PE-150	PE-180	PE-200	PE-250	PE-280
Softening point <sup>(a)</sup>	°C	145 – 155	175 – 185	195 – 205	245 – 255	275 – 285
Carbon residue <sup>(b)</sup>	wt %	≥ 47	≥ 54	≥ 58	≥ 67	≥ 73
Coking value <sup>(c)</sup>	wt %	≥ 50	≥ 57	≥ 60	≥ 69	≥ 75
Quinoline-insoluble (QI) <sup>(d)</sup>	wt %	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
Ash content <sup>(e)</sup>	wt %	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1	≤ 0.1
Appearance	—	Glossy black solid blocks • dense cross-section				
Typical use	—	Liquid-phase coating low-T impregnation	General coating mid-T impregnation	Mainstream Li-anode coating	High-perf. coating spinnable precursor	High carbon yield impregnation / premium anode
Form & packaging	—	Block / flake form • finished-product de-ironing • woven bag or 1-t jumbo bag • custom packaging available				
Order volume	—	Kg-scale R&D samples • ton-scale production orders • 25,000 t annual capacity				

(a) Softening point — Mettler automatic drop method. (b) Carbon residue — GB/T 268. (c) Coking value — GB/T 8727.

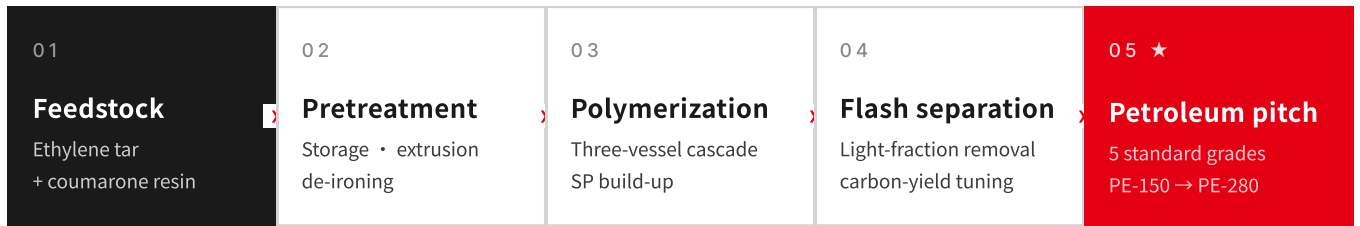
(d) Quinoline-insoluble (QI) — ASTM D2318. (e) Ash content — ASTM D2415. Retained sample & full Certificate of Analysis (COA) supplied with every lot.

Beyond the standard grades, custom **softening-point / carbon-residue combinations** and **low-QI / ultra-low-ash** variants are available for semiconductor-, optical-fiber-, and aerospace-grade applications.



## 02 Process Flow

PROCESS FLOW · ETHYLENE TAR → PITCH



FULLY-AUTOMATED CONTINUOUS LINE · 25,000 T/YR CAPACITY · VERTICALLY INTEGRATED · FULL TRACEABILITY

## 03 R&D & Customization

R&D · CUSTOM MODIFICATION

**01 Nitrogen-doped modified pitch**  
 Nitrogen-bearing precursors are introduced during melt processing; after carbonization, N atoms are retained in the sp<sup>2</sup> network. N-doped hard carbon delivers **higher reversible capacity** and improved Na<sup>+</sup>/K<sup>+</sup> storage — open to joint development for sodium- and potassium-ion anode programs.

**02 Custom SP / carbon-yield combinations**  
 Beyond the five standard grades, **SP/CY combinations** can be tailored to customer spinning, coating or impregnation windows. The R&D lab is equipped with bench reactors, TGA, FT-IR and GPC for full characterization.

**03 Mesophase pitch R&D**  
 Mesophase pitch is the precursor to **high-modulus / high-thermal-conductivity** carbon fibers. We invest continuously in mesophase formation, controlled heat treatment, and liquid-crystal-phase tuning — open to joint experimental-grade development.

**04 Low-QI / ultra-low-ash**  
 For semiconductor-, optical-fiber-, and aerospace-grade end uses, a **deep-purification process** can be added on top of the standard line, driving QI and ash down to higher-purity levels.

### Quality & Standards CERTIFICATIONS

ISO 9001:2015	Quality management system
Mettler drop method	Softening-point determination
GB/T 268	Carbon-residue testing
GB/T 8727	Coking-value testing
ASTM D2318	Quinoline-insoluble (QI) testing
ASTM D2415	Ash-content determination
COA	Retained sample & test report with every lot

### CONTACT · GET IN TOUCH

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The data herein is believed to be reliable but is not warranted for any particular end use. Products should be used under AYD technical guidance.