Natural Perlite – PEPN Series

Natural perlite | Türkiye | Six classified feed grades for industrial expansion

Product profile

PEPN is a range of classified natural perlite fractions supplied as raw mineral feed for thermal expansion. The six grades share the reported chemical composition and general physical properties; the principal distinction is their particle-size distribution. Raw perlite contains water within its volcanic glass structure, allowing expansion during controlled heating.

Typical applications and grade selection

Feedstock for plants producing expanded perlite used in construction materials, horticultural substrates, filtration and other industrial applications. Grade selection must reflect the furnace configuration, required expanded bulk density, final particle-size distribution and acceptable fines level. The finished-product properties depend on the expansion process.

Product range | nominal feed particle size

Grade	Nominal range	Grade	Nominal range
PEPN030074	0.074–0.30 mm	PEPN12060	0.60–1.20 mm
PEPN060015	0.15–0.60 mm	PEPN2412	1.20–2.40 mm
PEPN060030	0.30–0.60 mm	PEPN2812	1.20–2.80 mm

Typical physical properties

Parameter	Reported value	Remarks
Loose weight	1,100 / 1,350 g/L	Raw perlite; values as reported
Free moisture	Max. 1 wt%	For the supplied raw material
pH	6.6–8.0	10% slurry
Colour	Gray	Natural raw perlite
Expansion coefficient	15% (reported*)	Test basis unconfirmed; five grades

Material and processing characteristics

The classified feed grades are selected according to particle size rather than separate chemical formulations. Expansion behaviour must be established under the intended furnace conditions. The raw-material analysis alone does not predict the final expanded density, yield or proportion of fines.

** Expansion coefficient was supplied as 15% for five grades (no value for PEPN060030). Method and interpretation require confirmation.*

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Chemical Composition and Grade Data

PEPN series | Typical source values for the six classified grades

Typical chemical composition | weight percent

Component	Typical value	Component	Typical value
SiO_2	71.32 wt%	MgO	0.14 wt%
Al_2O_3	13.25 wt%	Na_2O	4.24 wt%
Fe_2O_3	0.82 wt%	K_2O	4.46 wt%
TiO_2	0.16 wt%	P_2O_5	0.01 wt%
CaO	0.57 wt%	LOI	4.82 wt%

Typical XRF values; the source analysis represents the PEPN series, not a separate assay for each grade.

Grade data

Grade	Nominal size	Loose weight	Moisture	pH*	Colour
PEPN030074	0.074–0.30 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray
PEPN060015	0.15–0.60 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray
PEPN060030	0.30–0.60 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray
PEPN12060	0.60–1.20 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray
PEPN2412	1.20–2.40 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray
PEPN2812	1.20–2.80 mm	1,100 / 1,350 g/L	≤1 wt%	6.6–8.0	Gray

** pH determined in a 10% slurry. Values apply to natural perlite feed as reported.*

Processing parameters to confirm in plant trials

Parameter	Evaluation
Expansion response	Bulk density and yield at the chosen furnace settings
Grain-size retention	Expanded particle-size distribution and fines
Moisture / water content	Feed stability and plant drying requirements

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Typical Particle Size Distribution

Reported sieve fractions | Six PEPN raw perlite grades

PEPN060015 | 0.15–0.60 mm

Sieve fraction	Reported wt%
>600 µm	0–2% max.
300–600 µm	40–70%
150–300 µm	20–45%
80–150 µm	5–15%
<80 µm	0–1%

PEPN060030 | 0.30–0.60 mm

Sieve fraction	Reported wt%
>600 µm	10–15%
>500 µm	20–25%
>400 µm	15–20%
>300 µm	15–20%
<300 µm	1–10%

PEPN030074 | 0.074–0.30 mm

Sieve fraction	Reported wt%
>0.30 mm	5–10%
0.20–0.30 mm	40–60%
0.10–0.20 mm	20–35%
<0.10 mm	1–2% max.

PEPN12060 | 0.60–1.20 mm

Sieve fraction	Reported wt%
>1.20 mm	0–5% max.
0.80–1.20 mm	45–60%
0.60–0.80 mm	35–50%
0.80–0.60 mm †	30–40% max.
<0.80 mm	0–5% max.

PEPN2412 | 1.20–2.40 mm

Sieve fraction	Reported wt%
>2.40 mm	1–2% max.
2.00–2.40 mm	10–35%
1.50–2.00 mm	35–50%
1.20–1.50 mm	15–30%
0.08–1.20 mm	5%
<0.08 mm	0–1% max.

PEPN2812 | 1.20–2.80 mm

Sieve fraction	Reported wt%
>2.80 mm	1–2% max.
2.40–2.80 mm	10%
2.00–2.40 mm	10–30%
1.50–2.00 mm	30–45%
1.20–1.50 mm	10–25%
0.08–1.20 mm	5%
<0.08 mm	0–1% max.

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Applications and Technical Guidance

Raw perlite | Trial programme, supply information and data status

Application and process guidance

Application / process	Material role	Check in trial
Perlite expansion	Classified raw furnace feed	Expansion yield, bulk density, fines
Construction-grade expanded perlite	Feed for lightweight aggregate	Expanded PSD, density and moisture
Horticultural grades	Feed for horticultural expanded perlite	Particle strength, fines and density
Industrial / filtration grades	Feed for application-specific processing	Expanded morphology and screening

Applications refer to expanded or processed products, not to direct use of the raw PEPN material.

Recommended validation programme

- Confirm particle-size distribution, moisture and loose weight for the delivered grade.
- Compare expansion performance against the plant’s established raw perlite feed.
- Set purchasing specifications after satisfactory laboratory and production trials.

Supply and quality information

Item	Information
Product form	Natural perlite; six PEPN classified particle-size grades
Packaging / shipment	Bulk or big bags by agreement; confirm per shipment
Inspection	Sampling and agreed technical tests on the delivered grade

Legal and commercial note

This data sheet is based on the technical information available at the date of issue. Perlite is a natural mineral material and may vary between production lots. Unless agreed in writing in an order confirmation or purchasing specification, the figures shown are typical values and are not guaranteed acceptance limits or a lot-specific certificate of analysis.

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