

PRODUCT TECHNICAL DATA SHEET

Nano Pak-Fan Steel

Brake Friction Compound PX3020

DESCRIPTION

PX3020 is a class of low steel NAO composition whose frictional performances have been promoted based on nanotechnology. Compared with parent low steel NAO composition, this product offers brake pads with greater lifetime; however, strong braking performance, negligible fade with silent braking are still its attracting performances.



GENERAL FEATURE

PX3020 is a low steel NAO friction composition containing optimized concentration of sustainable nanoparticle with improved braking performances. Therefore, this product can be classified as **low steel Nano-NAO**. **PX3020** is a light silver powder compound with no any copper, asbestos, lead and any other harmful and prohibited materials. This product can be hot-pressed in as-received state with no need to any further pre-processing or pre-mixing.

APPLICATIONS

PX3020 is suggested to be used as composite friction component of disk brake pads for variety of light to medium weight cars.

PROCESSING CONDITIONS

PX3020 is recommended positive molding using compression machine. However, the friction performance of brake pads produced by **PX3020** is greatly dominated by the compression molding conditions. The table below offers general conditions for successful compression molding of **PX3020**. However, the accurate molding conditions should be identified carefully according to technical identifications of press molding machine used as well as the type of brake pads and the mold set to be manufactured. Accordingly, to make the production of brake pads based on **PX3020** much reliable, we offer continued technical consultancy to our customers in every steps of brake pads manufacturing. Overall, this product does not need post-curing process, and can be used as-molded.

Processing Conditions	Value	Unit	Method/Condition
Hot press molding			
Applied molding pressure	3-8	MPa	Depending on the press machine and mold set.
Molding temperature	125-135	°C	
Molding time	4-8	min	Periodic breathing is required during molding.
Post-curing	N.A.		Post-curing is not necessarily required.

FRICITION PROPERTIES*

Property	Value	Unit	Test method
Normal COF**	0.38-0.48		Friction class G or F according to SAE J866/ISIRI 586
Hot COF	0.38-0.48		Friction class G or F according to SAE J866/ISIRI 586
Friction Code	GG, GF, FF		SAE J866/ISIRI 586
Wear Rate ($\times 10^7$)	< 2	$\text{g.N}^{-1}.\text{m}^{-1}$	SAE J661/ISIRI 586

*Frictional and wear properties presented here are applicable for pads manufactured based on Pak-Fan Composite Sharif Co. recommendations. For more details about the molding conditions consult with the company.

** Coefficient of friction

PHYSICAL AND MECHANICAL PROPERTIES*

Property	Value	Unit	Method/Condition
Apparent Density	0.6	g.cm^{-3}	
Hardness	< 70	HRR	Hardness measurement is carried out on manufactured pads.
Flexural Modulus	N.A.	MPa	
Compression Modulus	N.A.	MPa	
Thermal Conductivity	N.A.	w/m.K	
Specific Heat	N.A.	$\text{kJ/kg.}^\circ\text{C}$	

*Physical and mechanical properties presented here are applicable for pads hot-cured under molding conditions recommended by Pak-Fan Composite Sharif Co. For more details about the molding conditions consult with the company.

HANDLING AND TRANSPORTATION

Avoid shooting, shaking and vibrating the product packages during transportation, handling and storage because these may deteriorate uniformity of the compound.

STORAGE

PX3020 should be stored in dry indoor conditions at temperatures between 5-25 $^\circ\text{C}$, in its original unopened packages before using in molding process. Storage at higher temperatures will reduce the shelf life. The expiry date of the product under the storage conditions recommended is given on the product packages. Storage of opened packages for long period should be avoided.

TERMS AND CONDITIONS OF USE

The information and data presented in this technical data sheet have been validated by laboratory and practical tests and are believed to be accurate and reliable. Nevertheless, the quality of brake pads produced based on **PX3020** friction compound is strongly related to the manufacturing process used. As a result, the quality of the friction composite produced based on **PX3020** compound may vary from one manufacturer to another one. Hence, since we are not able to control the manufacturing process of every manufacturers, the customers shall remain responsible for satisfying themselves that **PX3020** friction compound manufactured by Pak-Fan Composite Sharif Co. is acceptable for their intended process and purpose. We warrant that **PX3020** friction compound is free from defects in accordance with and subject to our general conditions of supply.