

## 4-Process Oils and Their Types:

### 4-1- Rubber Process Oils (RPO):

Rubber process oils are categorized into three groups of hydrocarbon compounds: aromatic, naphthenic, and paraffinic. These oils are obtained during the refining and production process of base oils. They are a vital part of the formulation and components of various types of rubber, tires, and tubes, typically added to rubber compounds in amounts averaging between 30 to 40 parts per hundred rubber(phr) in each batch.

These products are currently marketed under the name "tire oil." Due to containing more than 20% harmful aromatic compounds (PCA), they pose environmental and human health issues. It should be noted that in Iranol products, this amount is less than 3%.

**Table 2: Characteristics of Iranol RPO:**

Characteristic	RPO	Test method
Kinematic viscosity @ 100 °C, cSt	9 Min 65 Max	ASTM D-445
Flash point , °C	250 (Min)	ASTM D-92
Pour Point, , °C	35 Max	ASTM D-97
Specific gravity @ 15 , Kg/m <sup>3</sup>	995	ASTM D-1298
Aniline point, °C	30 Min 60 Max	IP-2
Sulphur content, Wt%	4 TYP	ASTM D-4294
Ash content,	0.05 TYP	ASTM D-1218
Carbon type analysis , %	40 25 35	ASTM D-3238
C <sub>A</sub>		
C <sub>N</sub>		
C <sub>P</sub>		