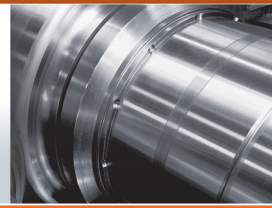


MATERIAL GRADES

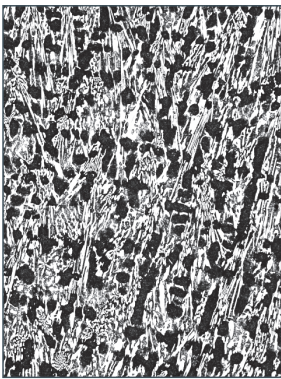
High chromium iron (OLVIT 90 M)



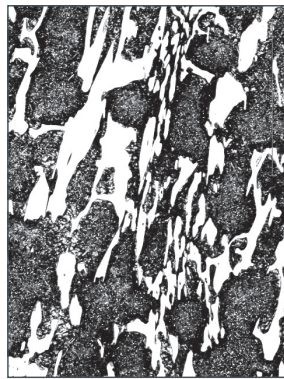
Material Barrel	Chemical composition [%]										Barrel Hardness [HSh“C”]
	C	Mn	Si	P max.	S max.	Cr	Ni	Mo	V	W	
OLVIT 90 M	2,7/3,1	0,7/1,5	0,4/0,8	0,1	0,05	17/20	1,2/2,0	1,4/2,2	0,2/0,8		78-81

- **Dimensional and weight limits:**
Ø 550-1050 mm / 6.000 mm // 22.000 kg
- **Barrel Structure**
ledeburite - sorbitic

100x



500x



- **Heat Treatment**

High temperature regime
Low tempering and/or stress relieving for obtaining high hardness readings and small structure formations giving high wear resistance parameters

BARREL HARDNESS DECREASE WITH DEPTH MAX. 3 SHORE C.
HARDNESS DISTRIBUTION ± 1,5 SHORE C (EACH SURFACE)

- **Physical and mechanical properties**

	OLVIT 90M
TENSILE STRENGTH - Rm [MPa]	650
BENDING STRENGTH - Rmi [MPa]	860
YOUNG MODULUS - E.10 ³ [MPa]	220
COEFFICIENT OF THERMAL EXPANSION [m/K]	13,6 x 10 ⁻⁶
THERMAL CONDUCTIVITY [W/m°K]	15 - 17

Material	Chemical composition [%]										Barrel Hardness [HSh“C”]
	C	Mn	Si	P max.	S max.	Cr max.	Ni	Mo	Others		
Core - Neck											
Lamellar iron	2,9/3,2	0,5/1,0	0,9/2,2	0,1	0,03	0,6	0,70/1,20	0,02/0,20			36 - 43
Nodular iron	2,8/3,5	0,1/1,0	1,5/2,5	0,1	0,02	0,5	0,60/1,00	0,02/0,20	Mg = 0,030 / 0,080		37 - 45

- **Core Structure**
Lamellar Graphite 100x



Nodular Graphite - 100x



- **Physical and mechanical properties**

	Lamellar Iron	Nodular Iron
TENSILE STRENGTH - Rm [MPa]	250	350
BENDING STRENGTH - Rmi [MPa]	450	540
YOUNG MODULUS - E.10 ³ [MPa]	115	165

- **NON-Destructive testing:**
Ultrasonic Test of Shell Depth and Bond Integrity

- **Product certificates**
Shell and Core Chemistry
Mechanical Testing
Hardness Measurement Report of Barrel and Necks
Dimensional Inspection of Body and Journal Diameters
Ultrasonic Report of Shell Depth and Bond Integrity

- **Application**
Work rolls for finishing stands of hot strip mills

