

I was Recently asked "What speed is 'high speed' approximately?"

Here is a chart showing the surface speed of different diameters at various RPM

Inch	6000 / Dia	9000 / Dia	Min Efficient rpm	Max Safe rpm
Diameter	Min Efficient rpm	Max Safe rpm	Surface MPH	Surface MPH
2	3000	4500	17.85	26.77
3	2000	3000	17.85	26.77
4	1500	2250	17.85	26.77
5	1200	1800	17.85	26.77
6	1000	1500	17.85	26.77
7	857	1286	17.85	26.77
8	750	1125	17.85	26.77
9	667	1000	17.85	26.77
10	600	900	17.85	26.77
11	545	818	17.85	26.77
12	500	750	17.85	26.77
13	462	692	17.85	26.77
14	429	643	17.85	26.77
15	400	600	17.85	26.77
16	375	563	17.85	26.77
17	353	529	17.85	26.77
18	333	500	17.85	26.77
19	316	474	17.85	26.77
20	300	450	17.85	26.77
21	286	429	17.85	26.77
22	273	409	17.85	26.77

To me high speed for polishing is around 30 mph or 50 kph Surface Speed. 44 Feet Per Second. The shape, condition and holding method **MUST** be taken into consideration. Remember if it flies off the lathe it will be travelling at the Surface speed.

Should you wear a face-shield? Think of it like this: To simulate the piece at 30 MPH. Lay on your back on the floor. Then with the help of a friend. (Who needs enemies) Drop the piece you are turning from 10 Meters (32 ft) above you (Say the roof of 4 story building.) In 1.4 seconds it will hit you and be travelling at 30mph Say "One and Ouch!!" Now when you are at the lathe you only have the Ouch!! time. At Min Efficiency rpm Speed 17.85 mph You would have to drop the piece 3.25 Meters (10.66 ft) At Max Safe rpm Speed 26.77mph You would have to drop the piece 7.3 Meters (24.6 ft)

Now before you ask, No I'm not smart enough to work that all out. See the Splat Calculator: <https://www.angio.net/personal/climb/speed.html> I think climbers use it to find out how much it will hurt if they fall.

Craft Supply Offer this good 3 min video on lathe speed: <https://www.youtube.com/watch?v=9gr6yYrZJJw>

The answer is YES, Always Wear a GOOD Impact resistant face shield.

Safe Turning,  
Richard...