



# NIAGARA

SPECIALTY METALS

## MATERIAL CERTIFICATION

12600 Clarence Center Road  
Akron, NY 14001  
716-542-5552  
716-542-5555  
Email: nsm@nsm-ny.com

**NJSB TAG NO 651**

Date of shipment: 02/10/2021

Production Order: 131084

Grade: 440-C ESR

Description: 440-C ESR HRA Descaled Sheared Sheet  
.103/.113 x 22/25" RW x 36.000" Ex.  
Heat# N00952

### Chemistry Analysis

NSM Heat Number:	N00952		Hardness:	<input type="text"/>	
Carbon:	<input type="text" value="1.010"/>	Manganese:	<input type="text" value="0.800"/>	Phosphorus:	<input type="text" value="0.017"/>
Silicon:	<input type="text" value="0.210"/>	Chromium:	<input type="text" value="16.600"/>	Vanadium:	<input type="text"/>
Cobalt:	<input type="text"/>	Molybdenum:	<input type="text" value="0.530"/>	Nickel:	<input type="text"/>
Sulphur:	<input type="text"/>	Tungsten:	<input type="text"/>	Titanium:	<input type="text"/>
Carbon:	<input type="text" value="1.010"/>	Manganese:	<input type="text" value="0.800"/>	Phosphorus:	<input type="text" value="0.017"/>
Silicon:	<input type="text" value="0.210"/>	Chromium:	<input type="text" value="16.600"/>	Vanadium:	<input type="text" value="0.070"/>
Cobalt:	<input type="text"/>	Molybdenum:	<input type="text" value="0.530"/>	Nickel:	<input type="text" value="0.180"/>
Sulphur:	<input type="text"/>	Tungsten:	<input type="text"/>	Titanium:	<input type="text"/>
				Copper:	<input type="text" value="0.080"/>
				Niobium:	<input type="text" value="0.010"/>
				Nitrogen:	<input type="text" value="0.038"/>
				Aluminum:	<input type="text"/>

### Remarks

Chemistry as per ASTM A-276, ASTM F899-12b

BHN HARDNESS = 179

Country of origin: USA

Material received date: October 08, 2020

Original mill heat no: G27779

Federal ID #: 16-1179936

*Robert Shabala*

Robert Shabala

We provide material that is free from mercury contamination and radiation at the time of shipment No weld repair is done.  
We are compliant with EU directive 2002/95/EC (ROHS), REACH, EN10204 2004 3.1 and DFARS  
252.225.7001,7002,7008,7009. Material is melted and manufactured in North America.

The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes including Federal Law, Title 18, Chapter 47. The above are true and correct results of tests on samples of the material. Said results meet the specification(s) and are on record.