Norseman Drill and Tool, Inc.

High Speed Steel Drill Bits

SECTION 1 : Chemical Product and Company Identification

MSDS Name: High Speed Steel Drill Bits
Manufacturer Name:Norseman Drill and Tool, Inc.
Address:
355 State St.,
St. Paul, MN. 55107

Business Phone:612-227-8911
Product Description:
PRODUCT TYPE: HIGH SPEED STEEL DRILL BITS

For information in North America, call: 612-227-8911
Manufacturer MSDS Revision Date:
January 1, 1998

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SECTION 2 : Hazardous Ingredients/Identity Information

Chemical Name	CAS#		
Boron	1303-86-2		

OSHA PEL TWA: 15.00 mg/m3
ACGIH TLV TWA: 10.00 mg/m3

Chemical Name	CAS#	% Weight	
Iron	1309-37-1	Bal.	

OSHA PEL TWA: 10.00 mg/m3
ACGIH TLV TWA: 5.00 mg/m3

Chemical Name	CAS#	% Weight	
Vanadium	1314-62-1	1.00 - 1.90%	

OSHA STEL/Ceiling: .50* mg/m3 (Dust); .10* mg/m3 (Fume)
ACGIH TLV TWA: .05 mg/m3; .05 mg/m3
Comments:
*Ceiling Limits

Chemical Name	CAS#	% Weight	
Carbon	1333-86-4	.82 - 1.07%	

OSHA PEL TWA: 3.50 mg/m3
ACGIH TLV TWA: .50 mg/m3

Chemical Name	CAS#		
Titanium	13463067-7		

OSHA PEL TWA: 15.00 mg/m3
ACGIH TLV TWA: 5.00 mg/m3

Chemical Name	CAS#		
Aluminum	7429-90-5		

ACGIH TLV TWA: 10.00 mg/m3

Chemical Name	CAS#	% Weight	
Manganese	7439-96-5	.30%	

OSHA STEL/Ceiling: Ceiling: 5.00* mg/m3 (Dust)
ACGIH STEL/Ceiling: Ceiling: 5.00* mg/m3

Chemical Name	CAS#	% Weight	
Molybdenum	7439-98-7	4.2 - 9.50%	

OSHA PEL TWA: 15.00 mg/m3
ACGIH TLV TWA: 10.00 mg/m3

Chemical Name	CAS#		
Nickel	7440-02-0		

OSHA PEL TWA: 1.00 mg/m3

ACGIH TLV TWA: 1.00 mg/m3

Chemical Name	CAS#	% Weight	
Silicon	7440-21-3	.30 - .45%	

ACGIH TLV TWA: 5.00 mg/m3

Chemical Name	CAS#	% Weight	
Tungsten	7440-33-7	0 - 6.35%	

OSHA PEL TWA: (Ins. Comp.)

ACGIH TLV TWA: 5.00 mg/m3

Chemical Name	CAS#	% Weight	
Chromium	7440-47-3	3.80 - 4.10%	

OSHA PEL TWA: 1.00 mg/m3

ACGIH TLV TWA: .50 mg/m3

Chemical Name	CAS#	% Weight	
Cobalt	7440-48-4	0 - 8.00%	

OSHA PEL TWA: .10 mg/m3

ACGIH TLV TWA: .05 mg/m3

Chemical Name	CAS#		
Copper	7440-50-8		

OSHA PEL TWA: .10 mg/m3

ACGIH TLV TWA: .20 mg/m3

GRADE NAME & TYPICAL CHEMISTRY (% Weight)

Grade: M-1
C: .83%
Si: .35%
Mn: .30%
Cr: 3.80%
W: 1.75%
Mo: 8.50%
V: 1.15%
Co: ---
Fe: Bal.

Grade: M-2
C: .86%
Si: .30%
Mn: .30%
Cr: 4.10%
W: 6.35%
Mo: 5.00%
V: 1.90%
Co: ---
Fe: Bal.

Grade: M-7
C: 1.00%
Si: .40%
Mn: .30%
Cr: 3.80%
W: 1.75%
Mo: 8.50%
V: 1.90%
Co: ---
Fe: Bal.

Grade: M-42
C: 1.07%
Si: .30%
Mn: .30%
Cr: 3.80%
W: 1.50%
Mo: 9.50%
V: 1.15%
Co: 8.00%
Fe: Bal.

Grade: M50
C: .82%
Si: .45%
Mn: .30%

Cr: 4.10%
W: ---
Mo: 4.2%
V: 1.00%
Co: ---
Fe: Bal.

No threshold limit values (TLV's) exist for specialty or high speed steels. Above TLV's are applicable to the constituent elements.

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SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:
Various Shapes, Sizes, Metal

Odor:
Odorless

Vapor Pressure:
Not Applicable

Vapor Density:
(AIR=l): Not Applicable

Boiling Point:
>= 5000 deg F

Melting Point:
Approx. 2500 deg F

Solubility:
IN.H20: Insoluble

Specific Gravity:
(H20=1): Approx. 7.8-8.2 (60 deg F)

Evaporation Point:
(BUTYL ACETATE=1): Not Applicable

Percent Volatile:
BY VOLUME: Not Applicable

FlashPoint:
NONE

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SECTION 4 : Fire And Explosion Hazards

Fire:
FIRE POINT: NONE

Flash Point:
NONE

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SECTION 5 : Health Hazards

Applies to All Ingredients:

Route of Exposure:
Inhalation, Eye Contact, Skin Contact, Ingestion

Potential Health Effects:
WE DO NOT CONSIDER THIS PRODUCT IN THE FORM IT IS SOLD TO CONSTITUTE A PHYSICAL HAZARD OR A HEALTH HAZARD. SUBSEQUENT OPERATIONS SUCH AS GRINDING, MELTING, WELDING, CUTTING OR PRO-CESSING IN ANY OTHER FASHION MAY PRODUCE POTENTIALLY HAZARDOUS DUST OR FUMES WHICH CAN BE INHALED, SWALLOWED OR COME IN CONTACT WITH THE SKIN OR EYES.

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SECTION 6 : Emergency And First Aid Procedures

Eye Contact:
Flush well with running water to remove particulate. Get medical attention.

Skin Contact:
Brush off excess dust. Wash area with soap and water.

Brush off excess dust. Wash area with soap and water.

Inhalation:
Remove to fresh-air, if condition continues-consult physician.

Ingestion:
Seek medical help if large quantities of material have been ingested.

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SECTION 7 : Reactivity Data

Chemical Stability:
Chemically Stable

Incompatibilities with Other Materials:
Reacts with Strong Acids to Generate Hydrogen Gas

Hazardous Decomposition Products:
Metallic Oxides

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SECTION 8 : Precautions For Safe Handling

Spill Cleanup Measures:
Not Applicable

Waste Disposal:
Solids: Sale as Scrap

Dust, Etc.: Follow Federal, State and local regulations regarding disposal.

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SECTION 9 : Control Measures

Ventilation System:
General: Recommended
Local: As Required

Hand Protection Description:
Gloves: As Required

Eye/Face Protection:
Recommended

Protective Clothing/Body Protection:
As Required

Respiratory Protection:
If fumes, misting or dust condition occurs and TLV as indicated in Section 2 is exceeded, provide NIOSH approved respirators.

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SECTION 10 : Other Information

Label Precautions:
SPECIAL PRECAUTIONS:
USE GOOD HOUSEKEEPING PRACTICES TO PREVENT ACCUMULATIONS OF DUST AND USE GOOD VENTILA-TION PROCEDURES TO KEEP ALL AIRBORNE DUST CONCENTRATIONS TO A MINIMUM.

THIS MATERIAL MAY BE COATED WITH A LIGHT PRESERVATIVE OIL AS A RUST INHIBITOR. IF SO COATED APPROPRIATE PRECAUTIONS ALONG WITH PERSONAL PROTECTIVE EQUIPMENT SHOULD BE ISSUED AS REQUIRED.

MSDS Revision Date:
January 1, 1998

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