

6.2 Technology Safety Data Sheet

Technology Safety Data Sheet Adamant Circular Saw (OENHP #: 2001-05, Version A)
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Section 1: Technology Identity		
Technology Name(s):	Emergency Contact:	
Adamant Circular Saw	Telephone International: +46 480 47 30 50 E-mail: adamant@nord2000se	
Manufacturer's Name and Address:	Information Contact:	
Nord 2000 Inc. 390 06 KALAMAR, SWEDEN	Telephone International: +46 480 47 30 50 E-mail: adamant@nord2000se	
Date Prepared:	TSDS Version Number:	Prepared By:
8/23/01	2001-05, Version A	John Kovach, MS; Jeana Harrison; Aaron Ondo, MS; Bruce Lippy, CIH, CSP

Section 2: Technology Description

The Adamant circular saw, has a counter-rotating twin-cutter, and is constructed with blades that work differently than conventional cutting wheels with twin blades, each rotating in opposite directions. It is used to cut wood and metals. Each blade is approximately 8 ¾ inches in diameter with a maximum cutting depth of 2 ½ inches. The saw is operated with an interlocked, guarded trigger switch located at the end of the saw opposite to the cutting blades. To operate the saw, the safety interlock must be depressed prior to powering the saw with the trigger control. The saw is supported by a handle at the front of the saw near the cutting blades. The top part of the blades is guarded near the handle, with approximately three-fourths of the face of the blades exposed.

The machine has two rotation speeds: 1,900 and 2,900 revolutions per minute (rpm). The basic rotation speed when the machine is started up is 1,900 rpm. When the button on the upper side of the handle is depressed, the speed adjusts to 2,900 rpm. The higher speed is maintained as long as the button is depressed. As soon as the button is released, the speed is returned to 1,900 rpm. The speed of the saw can be changed during the cutting process.

The machine is protected against overloading by an electronic device. If the current intensity gets too high, a diode on the handle lights. If the cutting speed is not decreased to avoid overloading, the saw will automatically shutoff.

Section 3: Technology Pictures



Figure 1: (Left) An operator making a horizontal cut in the plywood with the Adamant circular saw.



Figure 2: (Right) An operator using the Adamant circular saw to make a vertical cut in the plywood.

Technology Safety Data Sheet
Adamant Circular Saw (OENHP #: 2001-05, Version A)

Section 4: Safety Hazards

Hazard Category:

- 4 – Could result in death or permanent total disability
- 3 – Could result in permanent partial disability or injuries or occupational illness that may result in hospitalization of at least three persons
- 2 – Could result in injury or occupational illness resulting in one or more lost work days
- 1 – Could result in injury or illness not resulting in a lost work day

A. Buried Utilities, Drums, and Tanks	Hazard Rating: N/A
<ul style="list-style-type: none"> • Buried utilities, drums, and tanks are not associated with this technology. 	
B. Chemical (Reactive, Corrosive, Pyrophoric, etc)	Hazard Rating: N/A
<ul style="list-style-type: none"> • Chemical use is not associated with this technology. 	
C. Confined Space	Hazard Rating: N/A
<ul style="list-style-type: none"> • Confined space is not a hazard associated with this technology. 	
D. Electrical	Hazard Rating: 1
<ul style="list-style-type: none"> • Shock due to insufficient amperage in cord and/or ungrounded outlets may occur. • Performing maintenance or blade changes while machinery is energized may lead to shock. Following lockout/tagout procedures will reduce this risk. • Exposure to a damaged extension cord may lead to shock. 	
E. Explosives	Hazard Rating: N/A
<ul style="list-style-type: none"> • Explosives are not associated with this technology. 	
F. Fire Protection	Hazard Rating: N/A
<ul style="list-style-type: none"> • The facility fire protection plan should cover this tool, as it does not present an additional fire hazard. 	
G. Gas Cylinders	Hazard Rating: N/A
<ul style="list-style-type: none"> • Gas cylinders are not used with this technology. 	
H. Ladders/Platforms	Hazard Rating: N/A
<ul style="list-style-type: none"> • Electrical shock is possible when used with metal ladders or platforms. 	
I. Lockout/Tagout	Hazard Rating: 1
<ul style="list-style-type: none"> • The facility's lockout/tagout procedures and manufacturer's recommended procedures should cover this tool. 	
J. Mechanical Hazards	Hazard Rating: 3
<ul style="list-style-type: none"> • Cuts or abrasions from contact with saw blades during use and blade changes are possible. • Serious cuts may occur if saw blades come into contact with the operator (i.e. while resting saw on leg). 	
K. Moving Vehicles	Hazard Rating: N/A
<ul style="list-style-type: none"> • This saw does not utilize any moving vehicles, although one will be used to move the fiberglass-reinforced crates to the decommissioning area. The workers should be aware of the normal hazards associated with moving vehicles. 	
L. Overhead Hazards	Hazard Rating: 1
<ul style="list-style-type: none"> • During dismantlement of the fiberglass-reinforced crates, pieces of crate could fall upon completion of a cut or when the top of the crate is removed. Workers should wear hard hats when working on crates. 	

Technology Safety Data Sheet
Adamant Circular Saw (OENHP #: 2001-05, Version A)

M. Pressure Hazards	Hazard Rating: N/A
<ul style="list-style-type: none"> There are no pressure hazards associated with this technology. 	
N. Slips/Trips/Falls	Hazard Rating: 1
<ul style="list-style-type: none"> Electrical cords should be properly managed during cutting operations. Work area should be kept clean and organized to eliminate possible tripping hazards. 	
O. Suspended Loads	Hazard Rating: N/A
<ul style="list-style-type: none"> Suspended loads are a site-specific hazard and are not part of this technology. 	
P. Trenching/Excavation	Hazard Rating: N/A
<ul style="list-style-type: none"> Trenching and excavation are not used for this technology. 	
Section 5: Health Hazards	
A. Inhalation	Hazard Rating: 2
<p>Inhalation hazards are highly dependent upon the type of material being cut.</p> <ul style="list-style-type: none"> General inhalation hazards associated with woodworking: <ul style="list-style-type: none"> Wood dust Plywood resins Inhalation hazards associated with the disassembly of fiberglass-reinforced plywood crates: <ul style="list-style-type: none"> Fiberglass dust (possible human carcinogen) Fiberglass resins Vapors and formaldehyde 	
B. Skin Absorption	Hazard Rating: 2
<p>Skin absorption is largely based upon the material being cut.</p> <ul style="list-style-type: none"> Fiberglass dust causes skin irritation (associated with the disassembly of fiberglass-reinforced plywood crates). 	
C. Noise	Hazard Rating: 2
<p>A noise assessment should be conducted on-site during actual use of the technology to determine type of hearing protection required.</p> <ul style="list-style-type: none"> Excessive noise from tool and cutting operations may cause hearing damage. Excessive noise from ventilation and filtration system, as well as any noise from nearby operations, may cause hearing damage. 	
D. Heat Stress/Cold Stress	Hazard Rating: 2
<p>Heat stress is generally site-specific, although there are heat stress issues associated with this tool.</p> <ul style="list-style-type: none"> Heat stress can be generated by personal protective equipment such as: Tyvek suits, full-face respirators, and gloves. Heat from hand tool during extended tool duty time may cause heat stress. Extended worker duty time could cause heat stress, especially if the worker is working in hot conditions or wearing personal protective equipment. 	
E. Ergonomics	Hazard Rating: N/A
<ul style="list-style-type: none"> Hand/arm vibration from the tool may cause nerve damage known as Raynaud's Syndrome. Static and awkward operating postures may cause pain in the hands and/or arms. Awkward lifting of tool may cause pain in the hands and/or arms. Unbalanced weight of saw (weight in front) may cause worker fatigue. 	
F. Ionizing Radiation	Hazard Rating: N/A
<ul style="list-style-type: none"> Ionizing radiation is site-specific. 	
G. Non-ionizing Radiation	Hazard Rating: N/A
<ul style="list-style-type: none"> Non-ionizing radiation is site-specific. 	

Technology Safety Data Sheet
Adamant Circular Saw (OENHP #: 2001-05, Version A)

H. Biological Hazards	Hazard Rating: N/A
<ul style="list-style-type: none"> There are no biological hazards associated with this technology. 	
I. Other	Hazard Rating: N/A
<ul style="list-style-type: none"> None 	
Section 6: Phase Analysis	
A. Construction/Start-up	
<ul style="list-style-type: none"> Identify hazards through a pre-job analysis to determine personal protective equipment required. Inspect saw for obvious damage that may cause excessive vibration and potential for electrical shock. Select proper blades for each job and mount them properly so that worker fatigue is minimized and the potential for overexertion is reduced. Check power cords for proper amperage, frays, and cuts to protect against cuts and abrasions. Ensure blades are straight and the teeth are sharp to reduce amount of force needed and to minimize vibration. Ensure blades are properly mounted to start work to avoid overextension. 	
B. Operation	
<ul style="list-style-type: none"> Maintain proper work position, do not overextend arms. Wear proper safety protection for hands (leather-work gloves with rubber grips), eyes, (safety glasses or goggles), and ears (ear plugs or ear muffs), and respiratory protection (depends upon the operation). Do not bind the blades between work pieces; do not force tool. Change blades only while the tool is not energized and use approved lockout/tagout procedures. Use proper amperage power cord and a grounded outlet. 	
C. Maintenance (Emergency and Routine)	
<ul style="list-style-type: none"> Check for damage to the saw and frayed cord. Perform all maintenance with the power off (unplug saw) and use approved lockout/tagout procedures. Conduct maintenance with qualified personnel and use manufacturer's authorized parts. 	
D. Shutdown (Emergency and Routine)	
<ul style="list-style-type: none"> Keep blades away from body while shutting down the tool. Grip plug and remove from socket (outlet). Maintain proper ergonomic position to avoid cuts and abrasions by the blades. 	
E. Decontamination/Decommissioning	
<ul style="list-style-type: none"> Use approved decontamination procedures. Discard unit using approved procedures. 	
Section 7: Worker Protection Measures	
A. Exposure Monitoring	
<ul style="list-style-type: none"> Noise sampling should be conducted during the actual use of the tool to determine the actual noise levels and the proper personal protective equipment necessary. Air sampling should be conducted during the actual use of the tool to determine levels of site-specific contaminants in the air. Nuisance dust is associated with woodcutting and fibers are associated with the cutting of fiberglass-reinforced crates. 	

**Technology Safety Data Sheet
Adamant Circular Saw (OENHP #: 2001-05, Version A)**

B. Worker Training

Worker training should include the following elements:

- Pre-job walk through
- Manufacturer's operating procedures
- Respirator training
- Personal protective equipment to be used
- Hearing conservation program, including the proper use of ear plugs
- Lockout/tagout procedures
- Electrical training
- Recognition of heat stress symptoms
- Recognition of ergonomic issues and symptoms

C. Medical Surveillance

- Audiograms must be administered if the noise levels are above 85 decibels. Workers whose personal noise sample yields results greater than 85 decibels must be placed in a hearing conservation program, which includes audiograms.

D. Engineering Controls

- Retractable lower blade guard would reduce serious injury to worker during shutdown and handling.

E. Administrative Controls

- Worker training
- Controlled duty time of personnel and the equipment

F. Personal Protective Equipment

- Gloves
- Safety glasses or goggles
- Hearing protection
- Any other site-specific equipment

Section 8: Emergency Preparedness

- Emergency response procedure should identify how the hazards identified in this TSDS are being addressed. Each worker should be trained and understand how to respond.

Section 9: Comments, Lessons Learned, and Special Considerations

- No additional comments, lessons, or special considerations.