

TECHNOLOGY SAFETY DATA SHEET

PENTEK DESCALING METAL TECHNOLOGY

SECTION 1: TECHNOLOGY IDENTITY

Manufacturer's Name and Address: Pentek , Inc. 1026 Fourth Ave. Coraopolis, Pa 15108	Emergency Contact: Eric C. Crivella (412)262-0725
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Other Names: Pentek Descaler ROTO-PEEN Scaler, CORNER-CUTTER [®] , VAC-PAC [®] Pentek Metal Scaler	Signature of Preparer:

SECTION 2: PROCESS DESCRIPTION

The Pentek concrete coating removal system consisted of the ROTO-PEEN Scaler, CORNER-CUTTER[®], VAC-PAC[®]. They are designed to remove coatings from steel, concrete, brick, and wood. The Scaler uses 3M Roto Peen tungsten carbide cutters while the CORNER-CUTTER[®] uses solid needles for descaling activities. These are used with the VAC-PAC[®] vacuum system to capture dust and debris as removal of the coating takes place. The VAC-PAC[®] is a vacuum system designed to be used with Pentek's surface decontamination equipment. Dust and debris are captured by the two-stage positive filtration HEPA vacuum system that deposits the waste directly into an on-board 55-gallon or 23-gallon waste drum. The first stage filters have a 99.5% efficiency at 1 micron and a second stage HEPA efficiency of 99.97% at 0.3 microns. The first stage filters or roughing filters are continuously and automatically cleaned by reverse-flow pulses of high pressure air. The system is designed with high efficiency pneumatic eductors or electric vacuum generators. The system also has a full-drum alarm, multiple nozzles for simultaneous operation of several hoses, and the capacity to operate with hoses up to 200 feet long.

SECTION 3: PROCESS DIAGRAM

A process diagram is not available from the manufacturer for the Pentek metal descaling system, the ROTO-PEEN Scaler, CORNER-CUTTER®, and VAC-PAC®. A process diagram should be obtained from the manufacturer of the scabbling equipment before use. The photographs below have been included to give an idea of the system.



SECTION 4: CONTAMINANTS AND MEDIA

The technology has the potential to cause concrete dust and associated contaminants to become airborne. Specific contaminants need to be evaluated on a site-by-site, job-by-job basis to determine the potential for exposure.

SECTION 5: ASSOCIATED SAFETY HAZARDS

Probability of Occurrence of Hazard:

- 1 Hazard may be present but not expected over background level
- 2 Some level of hazard above background level known to be present
- 3 High hazard potential
- 4 Potential for imminent danger to life and health

SECTION 5: ASSOCIATED SAFETY HAZARDS	
A. ELECTRICAL (LOCKOUT/TAGOUT)	RISK RATING: 2
Technology has the potential to have electrical hazards. Assure proper grounding, use of ground fault circuit interrupters, and stress relievers on all equipment. Compliance with applicable electrical standards and codes and lockout/tagout procedures must be followed to assure the safety of personnel.	
B. FIRE AND EXPLOSION	RISK RATING: 1
Technology does not pose this hazard in and of itself but could not be used in an explosive environment due to the potential for sparking.	
C. CONFINED SPACE ENTRY	RISK RATING: 1
Not part of this technology unless the specific location where scabbler is being used is a confined space. In this case, confined space procedures would need to be followed.	
D. MECHANICAL HAZARDS	RISK RATING: 4
Use of large equipment and hand tools may pose the following: pinch points, struck by, and caught between hazards and fall from above. The need to use the hands to stabilize control of the CORNER-CUTTER [®] has the potential to place the hands where they may be contacted by the moving parts of the descaling head.	
E. PRESSURE HAZARDS	RISK RATING: 3
Technology presents hazards from air lines.	
F. TRIPPING AND FALLING	RISK RATING: 3
Vacuum hoses, electrical cords, and air lines present tripping hazards.	
G. LADDERS AND PLATFORMS	RISK RATING: N/A
Not part of this technology.	

H. MOVING VEHICLES	RISK RATING: 3
The presence of multiple pieces of mobile equipment (used to unload and load the technology) in relationship to a small area of operation may pose a significant danger. Sufficient warning devices such as horn, bells, lights and back up alarms should be utilized. Personnel should be trained to work with and around moving equipment.	
I. BURIED UTILITIES, DRUMS, AND TANKS	RISK RATING: N/A
Not part of this technology.	
J. PROTRUDING OBJECTS	RISK RATING: N/A
Not part of this technology.	
K. GAS CYLINDERS	RISK RATING: N/A
Not part of this technology.	
L. TRENCHING AND EXCAVATIONS	RISK RATING: N/A
Not part of this technology.	
M. OVERHEAD LIFTS	RISK RATING: 4
Unloading and loading of technology may require overhead lifts or the use of a forklift. Proper precautions indicated.	
N. OVERHEAD HAZARDS	RISK RATING: 2
Would only be present if a crane were required to unload or load equipment.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
A. INHALATION HAZARD	RISK RATING: 3
Technology produces dust from the coating being removed and could produce dust associated with the substrate. Specific hazards will be identified from the site characterization. Evaluation of total dust and/or respirable dust generated needs be evaluated as well as the specific contaminants associated with the coatings and surface being descaled.	
B. SKIN ABSORPTION	RISK RATING: 1
This would be dependent on the contaminants at the site and would be identified by the site characterization.	
C. HEAT STRESS	RISK RATING: 4
Ambient atmospheric conditions correlated with PPE levels must be considered.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
D. NOISE	RISK RATING: 4
The technology presents an excessive noise hazard.	
E. NON-IONIZING RADIATION	RISK RATING: N/A
Not part of this technology.	
F. IONIZING RADIATION	RISK RATING: N/A
Not part of this technology.	
G. COLD STRESS	RISK RATING: 1
Technology does not produce a hazard, but ambient conditions need to be considered.	
H. ERGONOMIC HAZARDS	RISK RATING: 3
Poses ergonomic hazards associated with lifting, bending, twisting, stooping, kneeling. These may cause injury/strain to the back, knees, hips, and/or legs. Also ergonomic hazards to the wrists/hands, arms, shoulders are possible from operation of the descenders.	
I. OTHER Arm-hand vibration and whole-body vibration	RISK RATING:
Poses a hazard due to arm-hand vibration from operating the ROTO-PEEN Scaler, and CORNER-CUTTER®. This may lead to associated health problems such as Raynaud's Syndrome. There is also the potential for whole-body vibration from the floor where the job is being conducted.	

SECTION 7: PHASE ANALYSIS
A. CONSTRUCTION/START-UP
The set-up/start-up phase presents several hazards including pinch points, slips/trips/falls, struck by/caught between, falling from above, muscular/back injury, and electrical.
B. OPERATION
The operational phase presents several hazards including exposure to contaminant (airborne and from the surface), arm-hand vibration, muscular/back injury, wrist/hand, arm, and shoulder injury, whole-body vibration, mechanical hazards, and extreme exposure to noise.
C. MAINTENANCE
The maintenance phase presents several hazards including pinch points, slips/trips/falls, struck by/caught between, muscular/back injury, electrical, exposure to contaminants (airborne and from the surface), and accidental activation of moving parts.
D. DECOMMISSIONING
The decommissioning phase presents several hazards including exposure to the contaminant, pinch points, slips/trips/falls, and muscular/back injury.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS
A. AIR MONITORING
When the coating on the metal is fractured and removed using the scalers, there is the potential for airborne hazards. In addition to total and respirable dust, monitoring needs to be conducted for the specific contaminants of the coating and the substrate. In addition, noise monitoring is essential.
B. WORKER TRAINING
Training that would apply in this case may include but not be limited to: HAZWOPER (Hazardous Waste Operations and Emergency Response), HAZCOM (Hazard Communication), Respiratory Protection, Hearing Conservation, Ergonomics (proper lifting, bending, stooping, kneeling, arm-hand vibration and whole-body vibration), Heat stress (learning to recognize signs and symptoms), Personal Protective Equipment, Job specific training for equipment operation, CPR/First Aid/Emergency Response/Blood borne Pathogens, Electrical Safety, Lockout/Tagout, Hand Signal Communication, Construction Safety (OSHA 500) and or General Industry Safety (OSHA 501).
C. EMERGENCY RESPONSE
Emergency response planning for a site needs to assure adequate coverage for hazards described in the TSDS. Having as many workers as possible trained in CPR and first aid is recommended.
D. MEDICAL SURVEILLANCE
Evaluation of personnel's general health with emphasis on the cardiovascular and respiratory system, back, and peripheral nervous system. Annual audiograms.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS

E. INFORMATIONAL PROGRAM

Workers must be trained in specific operation of equipment before use.

SECTION 9: COMMENTS AND SPECIAL CONSIDERATIONS

Due to extremely high noise levels produced, special consideration may need to be given to methods of control for exposure to noise.

Due to the high levels of noise produced, communication may become difficult. Personnel working in the area should be knowledgeable in and proficient in the use of hand signals as necessary.

Only personnel who have been adequately trained in the operation of this technology should be permitted to operate and/or work with the equipment.