

SECTION 6 - TECHNOLOGY SAFETY DATA SHEET

**TECHNOLOGY SAFETY DATA SHEET
PEGASUS INTERNATIONAL INC.
COATING REMOVAL SYSTEM (PCRS)
(METAL)**

SECTION 1: TECHNOLOGY IDENTITY	
Manufacturer's Name and Address: Pegasus International Inc. 106 Railroad Street Schenley, PA 15682	Emergency Contact: Tom Bodkin (412) 295-0066
	Information Contact: Tom Bodkin (412) 295-0066
	Date Prepared:
Other Names: PCRS, PCRS-5/7, Organic solvent mixture	Signature of Preparer: Operating Engineers National Hazmat Program 1293 Airport Road, Beaver, WV 25813, phone 304-253-8674, fax 304-253-7758. Under cooperative agreement DE-FC21-95 MC 32260

SECTION 2: PROCESS DESCRIPTION

The PCRS is a chemical paste that is applied to the surface using a brush, roller, or airless sprayer. Two types of PCRS are available. PCRS-5/7 is an organic solvent mixture primarily used for chemically resistant coatings and PCRS-ST1 and PCRS-1 which is an alkaline mixture of calcium hydroxide, magnesium hydroxide, and sodium hydroxide. PCRS-ST1 and PCRS-1 are primarily used for alkyd/latex coating removal. The type of PCRS used depends on the type and thickness of the coating and the type of substrate material. In order to determine the type of PCRS for the job, the required thickness of the paste, and the dwell time, a test area of approximately one square foot is used. Based on the performance of the system over this one square foot area, the operational parameters can be determined. Dwell time, which is the time required for the chemical to have its desired effect, can range from several hours to 24 hours. After the type of PCRS, thickness, and dwell time have been determined, a laminated backed material is placed on top of the chemical paste to slow down the drying process and to provide a mechanism to strip-off the material. After the dwell time is reached, the chemical substrate can be removed. Scrapers may be used to break-loose the layers as necessary or to break-loose the layers that are not removed when the laminated paper is picked up. Residue may also be cleaned off of the surface with a damp sponge with an agitating motion, absorbent sponges, or a vacuum, as needed. The paint and removal agent is then placed in drums for disposal at a later time.

The PCRS-5/7 is referenced by this technology safety data sheet (TSDS). This TSDS does not include information for PCRS-ST1 and PCRS-1.

SECTION 3: PROCESS DIAGRAMS



Figure 1. Workers removing PCRS from metal plate in an enclosed work environment.



Figure 2. Workers applying PCRS to metal plates in an enclosed work environment.



Figure 4. Workers removing chemical laminated paper and coating from I-beams.



Figure 3. Workers applying PCRS to I-beams.

SECTION 4: CONTAMINANTS AND MEDIA

The PCRS-5/7 is an organic solvent mixture. According to the MSDS supplied by Pegasus Inc., the mixture contains 10-25% Dibasic Ether, 20-50% N-Methyl-2-Pyrrolidone, 20-40% Aluminum Silicate, 1-5% Nonylphenol Ethoxylate, and 10-30% Non-hazardous ingredients. The dibasic ether has a manufacturer's recommended exposure limit of 10 mg/m³ and the aluminum silicate has an OSHA permissible exposure limit (PEL) of 15 mg/m³ and an ACGIH threshold limit value (TLV) of 10 mg/m³, as total dust. Dust should not be a concern during the application and removal of the PCRS since it is a wet process, but may become a concern if the chemical is allowed to dry before removal. Monitoring needs to be conducted for organic vapors and/or the individual ingredients of the mixture. A monitoring plan will need to be developed on a site-by-site job-by-job basis.

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

A. ELECTRICAL (LOCKOUT/TAGOUT)

RISK RATING: N/A

Not part of this technology.

B. FIRE AND EXPLOSION

RISK RATING: 3

The PCRS-5/7 is flammable and can create a potential explosion hazard. No ignition sources should be allowed in the area where the chemical is being used or stored. Fire may be extinguished with water spray or fog, foam, carbon dioxide, or dry chemical, in accordance with the manufacturer's MSDS.

C. CONFINED SPACE ENTRY

RISK RATING: 1

Not part of this technology unless the specific location where chemical is being used is a confined space. In this case, precautionary air monitoring and respiratory protection need to be taken into account. A confined space entry plan will need to be developed before the job is begun.

D. MECHANICAL HAZARDS

RISK RATING: N/A

Not part of this technology.

E. PRESSURE HAZARDS

RISK RATING: N/A

Not part of this technology.

F. TRIPPING AND FALLING	RISK RATING: 4
There is an extreme slipping/fall hazard created by the chemical dripping on the walking surface. Walking on the surface after the chemical has been applied needs to be avoided. Special anti-slip soles on the chemical protective boots needs to be considered.	
G. LADDERS AND PLATFORMS	RISK RATING: N/A
Not part of this technology.	
H. MOVING VEHICLES	RISK RATING: N/A
Not part of this technology.	
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: N/A
Not part of this technology.	
N. OVERHEAD HAZARDS	RISK RATING: N/A
Not part of this technology.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
A. INHALATION HAZARD	RISK RATING: 3
Organic vapors are produced during application and removal of the PCRS. Even at low levels these have the potential to cause headache, skin irritation, and respiratory tract irritation. The aluminum silicate does not present a concern as long as the chemical is wet.	
B. SKIN ABSORPTION	RISK RATING: 3
The PCRS-5/7 is a concern for skin exposure. The chemical may be absorbed into the body through the skin and may cause skin irritation and prolonged exposure may cause burns, in accordance with the MSDS.	
C. HEAT STRESS	RISK RATING: 4
Ambient atmospheric conditions correlated with PPE levels must be considered.	

D. NOISE	RISK RATING: N/A
Not a concern with this technology.	
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, but may be associated with the surface being treated.	
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 and kneeling. These may cause injury/strain to the back, knees, hips and/or legs.	
I. OTHER	RISK RATING: N/A
None noted.	

SECTION 7: PHASE ANALYSIS
A. CONSTRUCTION/START-UP
The set-up/start-up phase presents predominantly ergonomic hazards from lifting and carrying the buckets of PCRS to be applied to the surface. There is the potential for exposure to the chemical when the lids are removed from the buckets to mix and prepare the chemical for application.
B. OPERATION
The operational phase presents the potential for exposure to the chemical both during application and removal. There are also ergonomic stressors associated with bending, kneeling, and stooping during application and removal.
C. MAINTENANCE
There are no maintenance activities associated with this technology.
D. DECOMMISSIONING
After the coating has been removed from the surface by the chemical, it will need to be assured that the surface is "clean" of both PCRS residue and whatever contaminant was originally present on the surface. Precautions need to be taken to assure the chemical is not tracked from one area to another during clean-up and that all water runoff from cleaning up is contained and disposed of appropriately.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS

A. AIR MONITORING

Environmental conditions such as air temperature, radiant heat load, and ventilation in the area can affect how rapidly the organic solvent mixture vaporizes and therefore, the exposure level at a given time. The exposure level (vapor build-up) will also be affected by the size of the area where the PCRS is being used. A monitoring plan will need to be developed for the specific site and job where the chemical is being used. If circumstances are such that the chemical may dry before removal, aluminum silicate, as total dust, may also need to be monitored.

B. WORKER TRAINING

Training that would apply to the use of the PCRS may include but not be limited to: HAZWOPER (Hazardous Waste Operations and Emergency Response), HAZCOM (Hazard Communication), Respiratory Protection, Personal Protective Equipment, Ergonomics (proper lifting, bending, kneeling, stooping), Heat Stress, CPR/First Aid/Emergency Response/Bloodborne Pathogens, Construction Safety (OSHA 500) and/or General Industry Safety (OSHA 501), and job specific training for application and removal of the PCRS.

C. EMERGENCY RESPONSE

Emergency response planning for a site needs to assure adequate coverage for hazards described in the TSDS. Having at least one person per shift trained in CPR and first aid is recommended.

All precautions used when responding to an emergency situation at the site will apply. The PCRS-5/7 is flammable and is 85% volatile by volume. Its products of decomposition may include carbon dioxide, carbon monoxide, and oxides of nitrogen. In accordance with the MSDS, a fire involving the PCRS-5/7 should be extinguished with water spray or fog, foam, carbon dioxide, or dry chemical. This information needs to be conveyed to both on-site and off-site emergency response personnel before a situation occurs that involves the PCRS.

D. MEDICAL SURVEILLANCE

Evaluation of personnel's general health in accordance with 29 CFR 1910.120 with emphasis on the cardiovascular and respiratory system; back, knees, and legs; and central and peripheral nervous systems. In addition, any medical surveillance required by the OSHA standards needs to be provided.

E. INFORMATIONAL PROGRAM

Workers must be trained in specific application and removal of the PCRS. Additionally, they must be trained in accordance with 29 CFR 1910.1200, Hazard Communication.

SECTION 9: COMMENTS AND SPECIAL CONSIDERATIONS

Only personnel who have been adequately trained in the application and removal, as well as the hazards associated with the PCRS, should be permitted to work with it.

Consideration needs to be given to the compatibility of PPE with the specific chemical being used.