

# BLAST-IT-ALL<sup>®</sup>

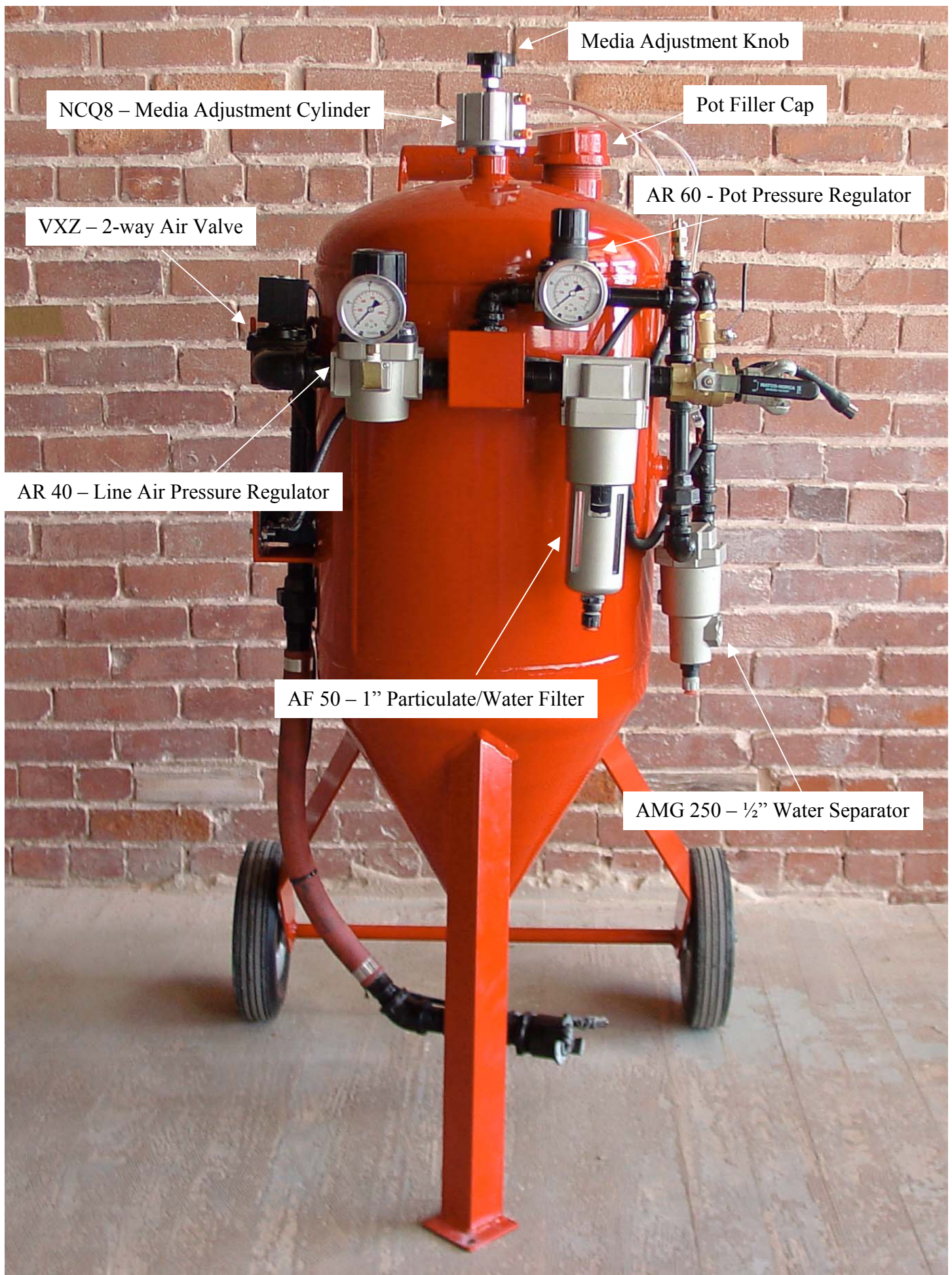
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## Operator's Manual

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Media Adjustment Knob

NCQ8 - Media Adjustment Cylinder

One Way Check Valve

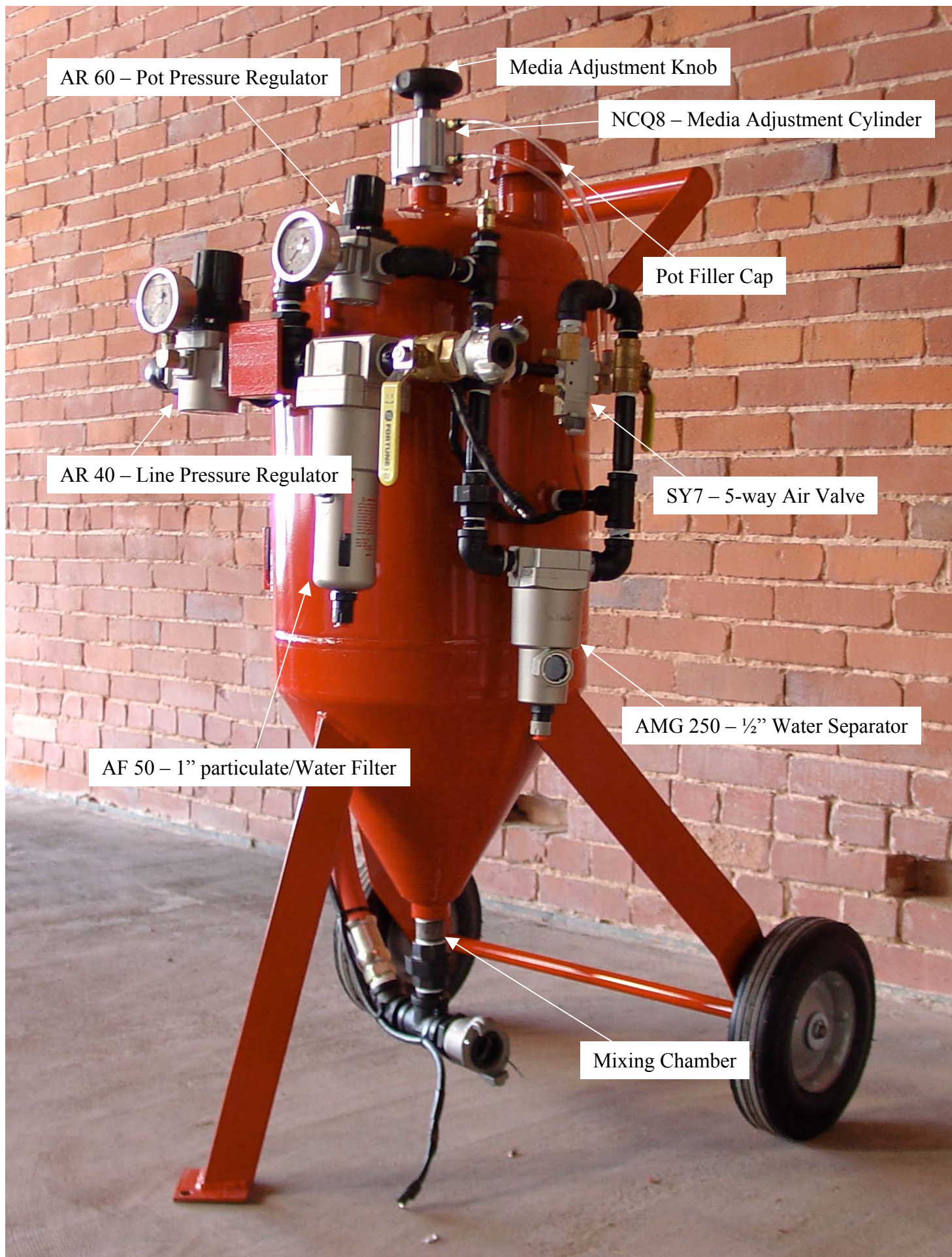
VXZ - 2-way Air Valve

AR 40 - Line Air Pressure Regulator

Mixing Chamber







AR 60 - Pot Pressure Regulator

Media Adjustment Knob

NCQ8 - Media Adjustment Cylinder

Pot Filler Cap

AR 40 - Line Pressure Regulator

SY7 - 5-way Air Valve

AMG 250 - 1/2" Water Separator

AF 50 - 1" particulate/Water Filter

Mixing Chamber

## Chapter 2



**Warning indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.**



**Danger indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.**

### *Safety*

- 1.1 Attention to detail and care must be taken to maintain a safe working environment. Each blasting environment has its own characteristics and must be evaluated prior to any blasting operation. Care must be taken to ensure worker safety and to ensure that the surrounding environment is not damaged.
- 1.2 Some suggested questions to ask when you are evaluating the blasting environment are:
  1. What coating(s) are to be removed, are they toxic? Though our equipment was designed to remove a variety of coatings, the equipment has not been tested or certified for mold remediation, lead paint removal, asbestos removal, or other toxic coatings nor does ISP offer training in these areas.



ISP strongly recommends that before you proceed with a mold remediation, lead paint removal, asbestos removal, or other hazardous/toxic materials, that you should receive the proper training from a certified school first. You should also seek consultation from an expert consultation firm on what needs to be removed from a hazardous job site.

ISP does not offer training in hazardous/toxic coatings removal nor has our equipment been tested or certified for hazardous/toxic coatings removal.

2. Am I in close proximity to a sensitive area where contamination from the blasting process would cause problems? Do I have to contain dust or spent media?
3. What is the substrate from which the coating(s) are to be removed; steel, wood, plastic, rubber, brick, and what is the condition substrate?
4. Do I have a dry place to store the blasting media and equipment?

1.2.1. Job sites present their own sets of potential hazards. Before setting up equipment, carefully look around the job site using a common-sense approach to find potential problems. If in doubt about any particular situation, take all necessary steps to eliminate the hazard. It is impossible to list all of the potential job site hazards but here are some areas to look at.

1. Electrical power lines- The work area must be inspected for exterior electrical power lines that may endanger operators. This is especially important if blasting is to be done from mechanical personnel lifting equipment. Blast operators should use care to avoid directly blasting power lines and insulators. Blasting could remove the covering and expose the wires. Electrical wiring should be removed from blasting work areas when possible. If not possible, have the electrical power removed and inspect the wires before you restore power.
2. Hazardous Gases- Blasting in areas where high concentrations of volatile gas are present is extremely dangerous. Seek expert advice from a qualified safety engineer about grounding requirements and proper grounding procedures. Ventilation is needed to eliminate gas concentrations. Air movers or exhaust systems may be installed to extract gas fumes from the blasting area. Consult with a safety engineer to determine that these methods will provide a safe blasting environment.
3. Static electricity- Static electricity is an inherent by-product of abrasive blasting. It is generated primarily by friction from high-speed abrasive skimming on the rubber tube through the hose. Grounding procedures involve driving a steel stake three feet (one meter) into the earth, and attaching a grounding wire to connect one of the blast machine legs and the stake, ensuring that there is positive metal-to-wire contact. When abrasive blasting where highly-volatile products are present, extra precautions must be taken to prevent ignition from static electricity. The blast machine, nozzle, operator and any ungrounded metal objects must be equipped with grounding wires. Check with the job safety engineer for expert advice on grounding requirements.

4. Work Surface Hazards- Since blast operators usually move around while performing their jobs, special precautions should be taken to keep the work surface clean and free of all obstacles operators may have a limited field of vision. Surfaces where platforms, scaffolding, scissor lifts, personnel lifts are used must be level, dry, free of obstructions and holes. Work surfaces must be free of water, oil, grease, abrasive and any other substance that may cause the operator to slip. Objects, such as tools, nuts and bolts, which may cause the operator to trip should be removed. Air and abrasive hoses should be laid out away from the operator's path.
- 1.3 Always wear all personal protective equipment when blasting.
    1. Ear protection.
    2. Thick leather gloves.
    3. An approved respirator for the coating(s) that you are removing.
    4. Eye protection.
    5. Clothing appropriate for blasting.
  - 1.4 Maintain control of the blast hose at all times during operation. Hose whip can cause serious injury or death.
  - 1.5 Do not tamper with or alter the dead man switch in anyway. Hose whip can cause serious injury or death.



**Do not attempt to alter, modify, or override the dead man switch in any manner.**

- 1.7 Never put hands or any other body parts in front of the blast nozzle. Always point the nozzle away from yourself or anyone around you.
- 1.8 Ensure there are no loose objects in the immediate blasting area. Loose objects can cause serious injury.



## Chapter 3

### *Equipment Installation*

- 3.1 When you are setting up your equipment please reference the Equipment Setup Diagram we have enclosed at the beginning of this owners manual. This is a typical set up that will apply to most applications.



All air hose and crow's foot (Chicago) fittings must have a safety pin or safety lanyard installed

- 3.2 From the compressor air outlet or service valve you will connect the After Cooler. Use the upper port of the after cooler as your air inlet.
- 3.3 Connect the Water separator to the lower port of the After cooler.
- 3.4 From the water separator, connect the air hose going to the ISP 1500SS.
- 3.5 Connect the electrical connections for the After cooler to the compressor battery or the 12-volt DC power supply that you are using. Connect the electrical connections for the ISP 1500.
- 3.6 Connect the Blast hose to the bottom of the ISP 1500 and connect the two electrical plugs.
- 3.7 Connect the blast nozzle that you are using for the day to the blast hose. Don't forget to install the washer!

## Chapter 4

### *Setting up your equipment for general use*

4.1 Inspect your compressor fluids, air filter, and general condition according to your manufacturer's manual. Place the compressor upwind from your blasting job site. Always avoid entry of dust, dirt or other contaminants into compressor air inlets to prevent premature wear on compressor parts. Start the compressor and allow it to warm up while you set up your equipment.

4.2 Lay out all of your equipment to be used for the day so that you can inspect it. Inspect for any worn components and replace as necessary. Some suggested items to inspect:

1. **Inspect the air hose for any soft spots.** Do not use any hose with soft spots. Soft spots pose danger of unexpected blowouts that can cause injury. Check your connectors (Chicago fitting-Crows foot) for wear and damage. Check gaskets on each connector and replace if worn, distorted or too soft.
2. **Inspect the after cooler.** Ensure the cooling fins are clean and clear of dirt and obstructions. Check the air connectors and gaskets, replace if worn or damaged. Check the electrical wiring and connectors are in good condition.
3. **Inspect the water separator.** Check the filter elements are still in good working condition. Check the air connectors and gaskets and replace if worn or damaged. Ensure the water drain is clean and free from obstruction.
4. **Inspect the blasting machine.** Check the crows foot (Chicago fitting) gasket for distortion or soft spots. Check the electrical connections for wear, bare or frayed wires. Check the valves and piping for tightness and operating condition. Immediately replace broken or bent handles. Check the pressure regulators and gauges are in good operating condition. Check the water separators are drained and drain valves are free from obstruction. Check the media feed control actuator assembly to ensure it still fits snug to the top of the pot. Check the air media mixing chamber unions still fit snug to the bottom of the pot.

5. **Inspect the blast hose.** Check the crows foot and gasket for wear or damage, replace if necessary. Check the nozzle, nozzle holder, and washer for wear or damage, replace as necessary. Check the blast hose for any soft spots. Check the wire is still firmly attached to the blast hose. Check the dead man switch for damage and check for proper operation.



**All air connections shall have a safety pin or safety lanyard installed prior to and during the use of this equipment**

4.3 After you have inspected the equipment and the compressor has warmed up, connect the air supply hose to the compressor. Blow some air through your air hose to ensure that it is free of oil, dirt, or other contaminants in the hose.

4.4 Close the air source from the air compressor.

4.5 Connect the air hose to the after cooler. Connect the electrical connections to the compressor battery or the 12-volt DC source that you are using.

4.6 Connect the water separator to the after cooler. Ensure that you use the lower port of the after cooler.

4.7 Connect the air hose from the water separator to the ISP 1500.

4.8 Connect the electrical connections from the ISP 1500 to the compressor battery or the 12-volt DC source.

4.9 Connect the blast hose and electrical connections.

4.10 With the electrical connections made to the ISP 1500 and no air, check the operation of the dead man switch. This can be done by actuating the dead man switch and listening to the dead man actuators on the pot. They should both make a clicking sound with a good electrical connection.

4.11 Ensure the air inlet valve is closed and the pot pressure dump valve is open. In this condition both ball valve handles will be vertical. Fill the pot with the abrasive that you will use for the day.



**Before you attempt to open the pot filler cap, ensure that the air inlet valve is closed and the pot pressure dump valve is open and that there is no pressure remaining in the pot, verified by the pressure gages**



4.13 Place the compressor into “High Gear” or turn the air service valve on to produce the air necessary for the ISP 1500.



**Before you pressurize the ISP 1500, ensure the filler cap is installed snugly back on to the pot**

4.14 Pressurize the ISP 1500. Close the pot pressure dump valve. Open the air inlet valve. Both ball valve handles should now point to the left.

4.15 Adjust the pressure for the pot. When you make adjustments with the pressure regulators, first unlock the adjustment knob by **gently** pulling up on the knob until you see the orange stripe and then you can adjust your pressure to the desired setting. After the pressure is set, lock the adjustment knob by **gently** pushing down on the knob until you hear it click. If you are using Sodium Bicarbonate, the pot pressure should be adjusted to 103psi to 105psi. When you are using Super K you should adjust the pressure to 102psi. If you are going to set a lower pressure on the pot for softer materials, maintain a 2lb differential between the pot and the blast hose with Super K and a 3lb to 5lb differential when using Sodium Bicarbonate.

4.16 Adjust the pressure for the blast hose to 100psi. If you are going to be using a lower pressure for softer materials, remember to set the blast hose 2psi lower than the pot pressure for Super K and 3psi to 5psi lower than the pot pressure for Sodium bicarbonate.

4.17 Slightly open the drain valves on the moisture separators. This is very important if you are blasting on days with high humidity to allow the moisture separators to efficiently work.

4.18 Set the media flow. Actuate the dead man switch and adjust the media flow to the correct amount.

1. To increase the media flow, turn the media adjustment knob to the left.
2. To decrease the media flow, turn the media adjustment knob to the right.
3. When you are making adjustments to the media flow make small corrections with the adjustment knob until you achieve the media flow you desire.
4. Your media flow is properly tuned when you can achieve one hour to one hour and ten minutes with a full pot of Sodium Bicarbonate. With Super K you should be to get forty-five minutes to fifty minutes with a full pot of Super K.

4.19 Now you are ready to start blasting!

## Chapter 5

### *Blasting Techniques*

5.1 To achieve the most efficient blast pattern we list a few techniques.

5.2 Technique has a tremendous effect on productivity and surface finish. Three factors to consider with regards to the blast nozzle are distance, angle, and dwell time.

1. Distance- from the coatings you are working with. This will need to change from time to time depending on the substrate and coating you are working with. This will also help you achieve the most efficient blast pattern size.
2. Angle- from the surface you are working with. This will need to change also from time to time depending on the coating you are working with. The angle will help determine the speed you can remove your coating. Some coatings come off easier with a 45-degree angle while others come off better with a 90-degree angle.
3. Dwell time- this is usually determined by the thickness of your coating. This will also determine how long you need to stay in one spot. With a thicker coating you will have to stay in a spot longer than you would if you have a thin coating.

5.3 Begin by holding the blast nozzle approximately 12 inches or more with at least a 45-degree angle from the surface you are cleaning.

5.4 Slowly move in to the surface you are cleaning until you see the coatings starting to be removed.

5.5 Maintain this distance while maintaining your angle from the surface and start to move in a straight line. This line can be horizontal or vertical depending upon the surface you are cleaning.

5.6 If the coatings are coming off too slow, slowly decrease your distance from the surface or change your nozzle angle.

5.7 Blasting in a straight line will help you maintain an efficient blast pattern. If you begin to wave the nozzle or start to use short blast strokes this will cut down on your blast pattern efficiency and increase the time to remove your coatings. Use smooth steady strokes.

5.8 This is the easiest way to start the blasting process. As you gain experience blasting you will begin to automatically judge which blasting technique will be best for the surface you are working with.

5.9 Keep in mind there are various coatings and surfaces that you will be working with. Do not be afraid to change your nozzle angle, distance, dwell time, media feed, and blast pressure to determine what removes your coatings best. The best way to start a job is to do a test patch first to determine which blast pattern will work best.

5.10 Normally, on harder surfaces (cars, steel, sheet metal, concrete) you can start with a pressure of 100psi set on your blast hose. Maintain the proper pressure differential with the pot.

5.11 On softer surfaces (fiberglass, plastic, brick) you may want to start with a pressure of 65psi or less on your blast hose. If you are unsure which pressure to use it is always best to start with a lower pressure and slowly increase the pressure until the right pressure is found. Maintain the proper pressure differential with the pot. You may also want to increase the distance of the nozzle from the surface you are working with.

5.12 When you change the pressure of your blast hose you must change the pressure of the pot as well. Maintain a greater pressure differential of 2lbs with Super K and 3lbs to 5lbs with Sodium Bicarbonate.

5.13 When you change the pressure you are using you must also change your media feed.

5.14 When you are working with thicker coatings you may have to blast with a nozzle angle greater than 45 degrees up to 90 degrees and increase your dwell time. Do not be afraid to experiment.

5.15 When you change the blasting media (from Sodium Bicarbonate to Super K or vice-versa) you are using in the pot, you will have to re-adjust your media feed.



**Before** you attempt to open the pot filler cap, ensure that the air inlet valve is closed and the pot pressure dump valve is open and that there is no pressure remaining in the pot, verified by the pressure gages

5.16 When it comes time to refill the pot remember to first close the air inlet valve, then open the pot pressure dump valve, verify there is no pressure in the pot by looking at the pressure gauges, then open the pot filler cap.

5.17 Keep in mind that media blasting creates dust. Dust can sometimes present a problem especially when blasting in a heavily populated area or in a small confined space. You can try the wet head attachment for the blast nozzle to control the dust and to



clean residue from the blasting surface. If you cannot use the wet head attachment try to set up a containment area using tarps, tents, etc. and use high velocity fans to clear the blasting environment. Keep in mind that the dust you remove from your blasting environment will have to be contained to keep the neighbors happy.

## Chapter 6

### *Care and Maintenance*

6.1 When you have finished blasting for the day, empty the machine. Do not leave unused blasting media in the machine. Unused media left in the machine can cake and plug the interior of the machine after a period of time. To empty the machine:

1. Remove the air supply hose and the blast hose from the machine.
2. Gently lay the pot down on the handle, watch your fingers!
3. Remove the flange nut from the air/media-mixing chamber.



4. Remove the threaded union that screws into the pot. This is also where the bottom O-ring is located.



5. With everything removed from the bottom of the pot, carefully stand the pot back upright. Have a bag or bucket nearby to catch the media. Keep in mind; the pot will be heavy to lift from this point. Be careful!

6. When the media has drained from the pot, give the media feed rod a few gentle taps to remove any remaining media.
7. Replace all components in the reverse order that they were removed. When you replace the threaded union back into the pot, ensure the O-ring side of the union goes into the pot.

6.2 There is an O-ring located at the bottom of the pot that will need to be replaced from time to time. Follow the above procedure to empty the pot. With the threaded union removed from the pot, you can now replace the O-ring. The O-ring is actually located in the threaded union. When you screw the threaded union back into the pot, ensure that the O-ring side goes into the pot.

6.3 When you have finished blasting for the day and your machine is empty, run some air through the machine and blast hose for a minute or two. This will ensure that there is no media in the hose or air/media mixing chamber. This will also allow any moisture that may have built up through out the day to escape.

6.4 Inspect your machine inside the cylinder and at the air/media-mixing chamber. This can be done when emptying the machine. Remove any build up from the air/media-mixing chamber. Keep your machine as clean as possible. A well maintained machine lasts longer and performs better.

6.5 Inspect your machine on a regular basis. Inspect the piping, hoses, valves, etc. for wear and tear. If any part is worn it must be replaced before any blasting is done.

6.6 Inspect your air supply hose for cuts, ruptures, soft spots, etc. Replace any air supply hose with soft spots. Avoid crushing your air hose as this can reduce the life span of the hose. Store the hose rolled up and in a dry place. This will also help in prolonging the life of your hose.

6.7 When blasting in cold weather do not store the machine outside over night. Some residual moisture may still be in the airflow system and could freeze up causing ice to block air flow to cylinders and solenoid. When using the machine in below freezing conditions, it is advisable to place the equipment in a spot that can be heated. This will reduce the possibility of the unit being damaged from ice.

## Chapter 7

### *Cleanup*

- 7.1 After you have completed job, shut off the air inlet valve and depressurize the machine.
- 7.2 Shut off the air service valve on the compressor and allow the compressor to idle while you clean up.
- 7.3 Bleed off all air in your air supply lines. First, close the air service valve at the compressor. Second, open the air inlet valve on the pot. Third, open the pot depressurization valve and bleed off all air in the system. Verify there is no pressure left in the system by checking the gauges on the pot. If there is any doubt that there is any air pressure left in the system, repeat these three steps.
- 7.4 It is important to remember that although Sodium Bicarbonate is environmentally friendly and worker safe, it leaves a residue behind after the blasting process.
- 7.5 In most cases this is helpful because it can act as a rust inhibitor allowing a few days before you have to recoat your surface. The residue left behind must be neutralized before you recoat your surface. You can use a soap and water mix but this will take several applications. A more effective way to neutralize the soda is to use a vinegar and water mix. Another good method to neutralize the soda is to use a citric acid and water mix.
- 7.6 Super K, Corn Cob, and Crushed glass leave no residue behind after blasting. However, as with all coating products, you must thoroughly clean the surface to ensure that no dust or debris reacts with the new coating.
- 7.7 If you are blasting near vegetation it is a good idea to soak the area during or after blasting. If you are using sodium bicarbonate near vegetation it is a good idea to take an extra step and use a mixture of vinegar and water to neutralize the soda. Sodium Bicarbonate in large quantities can shock or kill the vegetation and grass.
- 7.8 Ensure that your blasting site is free from garbage, i.e. pieces of media blasting bags.



## Chapter 8

### *Troubleshooting*

#### **8.1 Air is coming out of the hose but no media is coming out.**

- A. Shut off the air supply to the machine and bleed off all air pressure from the machine.**



**Before** you attempt to open the pot filler cap, ensure that the air inlet valve is closed and the pot pressure dump valve is open and that there is no pressure remaining in the pot, verified by the pressure gauges

- B. Open the pot filler cap and check the level of the media.
- C. Inspect the air/media mixing chamber is not plugged.
- D. Ensure the actuator for the media feed control is operating correctly.

#### **8.2 I can blast for a few minutes but the media stops flowing.**

- A. Is the media feed too lean? Try to run the machine a little richer. Turn the media feed knob 1/16<sup>th</sup> of a turn counter clockwise then run the machine at the new setting. Repeat this procedure until the machine is running correctly. Only make small adjustments each time.
- B. Ensure the moisture separator drains are slightly opened and a small amount of air is flowing out of the drain ports.
- C. Ensure the after cooler fan is connected to the battery and the fan is running. Ensure the cooling fins on the after cooler are clean and clear of obstructions.
- D. Ensure the pot pressure is at a higher-pressure setting than the blast hose pressure setting. Set the pot pressure 2psi

higher than the blast hose pressure for Super K and 3psi to 5psi for Sodium Bicarbonate.

**8.3 The media flow is sputtering / a full pot will only last a few minutes.**

- A. Run the pot leaner. Turn the media feed knob  $1/16^{\text{th}}$  of a turn clockwise then run the machine at the new setting. Repeat this procedure until the machine is running correctly. Only make small adjustments each time.

## Chapter 9

### Super K Blasting Media

New applications for Super K (potassium sulphate) as a blasting media are being developed all the time. The following is a list of some of the areas where Super K is being used. (Correct air pressure and blasting technique is always required)

<u>Paint Removal</u>	Stainless Steel, glass, and chrome
<u>Clean Parts</u>	Will not damage threads, cast aluminum, bearings and seals
<u>Use in Hazardous Areas</u>	Will not cause thermal sparks
<u>Inspect Weld Seams</u>	Super K will not cause crack closure
<u>Remove Dirt Residue Or Paint Or paint from tank interiors</u>	Super K is non hazardous to workers, even in confined areas. Solubility of media allows for easy cleanup
<u>Speed up Turn Around</u>	Other work may continue while Super K is used

### Avoid Shutdowns

<u>Replace Hand Cleaning</u>	Super K is faster reduces manual labor
<u>Remove Tar Buildup on</u>	Will not damage bearings or rollers

### Asphalt Shingle Equipment

<u>Remove Dirt, Barnacles and Paint from Steel Vessels</u>	Super K will not damage substrate and helps meet containment requirements
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## Super K

# “UNIQUE PRODUCT”

**BIA** is pleased to announce the introduction of a new media for paint stripping. This new media is a specially produced and sized potassium hydrate crystal; our new blasting media is called Super K. This new media has several desired characteristics for the blasting industry.

- It's Environmentally Friendly
- It's Worker Friendly
- It's Water Soluble
- It has a Neutral pH Level
- It's Non-Sparking

Recent tests have shown when stripping paint off metal using the same equipment Super K is between two and three times faster than sodium bicarbonate.

Another test concluded in comparison to seventy grit silica sand, Super K was as fast in removing paint without pitting the metal surface unlike silica sand.

To summarize Super K has several advantages over sodium bicarbonate when used to strip coatings off of metal. Some of these advantages include:

- It leaves a slightly increased profile.
- It leaves no hard to remove residue.
- It greatly reduces blasting time.
- It reduces the amount of media required to remove coating(s)

<b>PAINT REMOVAL</b>
Removes paint and other coatings from aluminum, stainless steel, glass, chrome and from the sides of pools.
<b>CLEAN PARTS</b>
Will not damage threads, cast aluminum bearings and seals.
<b>USE IN HAZARDOUS AREAS</b>
Will not cause thermal sparks
<b>REMOVE CALCIUM BUILDUP</b>
Removes calcium deposits from the sides of swimming pools and water gardens.
<b>INSPECT WELD SEAMS</b>
Super K will not cause crack closure
<b>REMOVE DIRT, RESIDUE OR PAINT FROM TANK INTERIORS</b>
<b>SPEED UP TURNAROUNDS; AVOID SHUTDOWNS</b>
<b>REPLACE HAND CLEANING</b>
Super K is faster, reduces manual labor.
<b>REMOVE TAR BUILDUP ON ASPHALT SHINGLE EQUIPMENT</b>
<b>REMOVE DIRT, BARNACLES AND PAINT FROM STEEL VESSELS</b>

**K-2 BLASTING MEDIA APPLICATIONS  
NEW APPLICATIONS FOR K-2 AS A BLASTING MEDIA  
ARE BEING DEVELOPED ALL THE TIME**

The following is a list of some of the areas where K-2 is being used.  
(Correct air pressure is always required.)



## Chapter 10

### Sodium Bicarbonate APPLICATIONS

<b><u>ARCHITECTURAL APPLICATIONS</u></b>	
Remove graffiti from concrete, brick, trees and monuments	- Will not damage substrate - minimum containment is required
Remove dirt, soot, carbon from ornamental metals including brass and copper	- Will not damage substrate - minimal containment is required
Remove smoke, soot, smoke odor from buildings and equipment	- Will not damage substrate or equipment
Remove dirt, soot, carbon from stone surfaces including limestone, brick, granite and concrete	- Will not damage substrate - minimal containment is required
Removes surface corrosion, dirt from aluminum window frames	- Will not damage metal and glass
Cleans and removes failing finishes on wood	- Reduces the need for labor intensive sanding
Speeds cleaning in livestock facilities	- Increase efficiency of pressure washing systems
Cleans architectural structures without masking or removing glass, aluminum surfaces, rubber or plastic	- Reduction of preparatory time
Cleans ceramic tile	- Will not damage tile or grouting
Polish chrome	- Process will remove surface corrosion and polish chrome without substrate damage

<b><u>MARINE APPLICATIONS</u></b>	
Remove dirt, grease, barnacles, anti-fouling paint from hulls of aluminum, wood, fiberglass or steel vessels	- Process will not damage substrate and sodium bicarbonate helps meet containment requirements. Process can remove one layer at a time.
Degrease, clean bilges	- Soluble nature sodium bicarbonate allows removal of spent media with bilge pump
Clean engine components	- Process will not damage bearings, seals or plastics
Clean or de-paint radio/radar masts and antennas	- Will not damage substrates of aluminum or plastics
Replace hand cleaning and hand tooling	- The soda blasting process is faster, reducing manual labor

## **FOOD PROCESSING APPLICATIONS**

Clean FDA/USDA inspected areas

- Blasting grade sodium bicarbonate is food grade

Clean carbon buildup from baking trays

- Will not cause damage to substrate

Clean areas where residual contamination cannot be tolerated.

- Sodium bicarbonate is 100% water soluble for easy clean up

Clean grease, oil, process residue or paint from rotating equipment

- Cleaning can be done without paint removal. Sodium bicarbonate will not harm bearings, seals and packing. Some equipment can be cleaned while in operation.

Clean grease, oil or process residue from tanks, hoppers, vats or tote bins.

- Sodium bicarbonate is 100% water soluble and food grade eliminating clean up concerns

Removes grease and fats in packing plant equipment and work areas

- Will not harm substrate. 100% solubility and food grade media eliminates residue concerns.

Cleans ceramic tile, mildew from grouting

- Will not damage tile or grouting

Cleans ventilation systems

- Will not harm bearings, fan blades, housings and ducting

## **INDUSTRIAL PROCESSING PLANTS APPLICATIONS**

Remove dirt, oil, grease, process residue and paint from rotating equipment

- Can accomplish cleaning without paint removal. Sodium bicarbonate will not harm bearings, packing or seals. Some equipment can be blasted while in operation.

Remove dirt, oil, grease and overspray from aluminum jacketing protection insulation

- Will not remove metal or disfigure jacketing

Clean cooling towers

- No need to drain or seal off cooling tower water. Sodium bicarbonate will dissolve in water

Remove dirt, oil, grease and paint from galvanized steel

- Will not remove galvanize

Remove paint over spray from glass, sight gauges

- Will not scratch or break glass. Sodium bicarbonate polishes glass

Use in hazardous areas

- Sodium bicarbonate will not cause thermal sparks when striking the workplace.

Inspect weld seams

- Sodium bicarbonate blasting will not cause crack closure.

Remove dirt, oil, grease and carbon deposits from ceramic surfaces including insulators

- Sodium bicarbonate will not damage ceramic

Clean aluminum and stainless steel hoppers

- Sodium bicarbonate will not damage substrate. 100% water solubility eliminates concern about residue

Remove dirt, grease, oil process build-up, residue or paint from tank interiors

- Sodium bicarbonate is non-hazardous to workers, even in confined areas. Solubility of media allows for easy cleanup.

Clean heat exchangers

- Soda blasting allows cleaning of hard to reach areas. Will not harm gaskets.

Speed up maintenance turnarounds; avoid shutdowns

- Other work processes can take place in area while soda blasting is being used.

Clean remote areas

- ISP equipment is portable and allows for user to clean equipment in place.

Replace hand-cleaning and hand tooling

- ISP is faster, reducing manual labor

Clean TEFC-rated motors

- The cleaning process will not harm seals and bearings

Clean area with rubber gaskets

- The cleaning process will not harm rubber

Remove ink buildup on printing press rollers

- Will not damage rollers or bearings

Remove tar buildup on asphalt shingle processing equipment

- Will not harm bearings or rollers

## **TRANSPORTATION and INDUSTRIAL EQUIPMENT APPLICATIONS**

### Paint removal

- Will not damage aluminum, stainless steel, fiberglass, glass, rubber and chrome

### Clean and remove oil and grease from engine compartments

- Will not damage bearings, cast aluminum, cast iron, rubber, wiring and radiators.

### Clean parts

- Will not damage threads, cast aluminum, bearings and seals.

### Clean fuel tanks

- Removes fuel stains on aluminum and stainless steel tanks. Non sparking or heat generating process.

### Cleans asphalt paving equipment

- Removes built up asphalt without removing paint or hurting bearings and other sensitive areas

### Cleans waste trucks and storage bins

- Degreases and cleans without damage to hydraulics, glass, bearings and paint

### Railway Locomotives

- Removes soot, diesel fuel stains, failing paint and other contaminants.

### Battery connections

- Cleans battery terminals and neutralizes spilled acid.

### Electrical connections

- Removes photo resist and other process residue without hurting substrate.

## **Chapter 11**

### **Soda Blasting FAQ**

#### **1. What is soda blasting?**

Soda blasting is an environmentally friendlier way of removing paint, dirt, coatings and other surface contaminants that does not cause damage to the surfaces being cleaned. The action of the sodium bicarbonate used, does not cause heat buildup, sparks, or abrasion to the substrata.

Sodium bicarbonate is water-soluble and in most cases, dependent on your local laws can be disposed of through conventional drainage systems. The only material that needs to be disposed of is the contaminant removed, which can be separated by dissolving the blast media in water, and the use of a filter or centrifuge to separate the contaminant from the solution.

#### **2. How does soda-blasting work and what are the advantages over sand blasting?**

The sodium bicarbonate used in the blasting process is a larger particle than the baking soda used in the food industry, although it is the same purity. The particles are propelled by compressed air through specialized blasting machines.

Air pressures can be varied from as low as 20 psi on soft bases to 120 psi or more on hard surfaces. Water is used as either a dust suppressant or the propellant for some decontamination and paint removal. For surfaces that are somewhat softer, such as wood, water reduces the cutting action by as much as 20 to 30 percent.

Unlike abrasive sand blasting, sodium bicarbonate particles remove contaminants by the energy released when the particles explodes as they come



in contact with the surface to be cleaned. Silica sand on the other hand, removes the material by wearing it away. This is also the result when the sand hits the metal surface, the metal is worn away and the surface is damaged. We have used Soda blasting on expensive racing bike aluminum composite frames; to remove powder coated paint, without any damage to the surface.

Our test frame had been previously blasted with sand, and glass beads with disastrous results. Our test area was as clean and unharmed, as it was when it was new prior to painting. Now the bike company uses only soda blasting for their custom framework.

### 3. How was Soda Blasting developed?

Back in 1972, when New York State engineers were looking for ways to clean the Statue of Liberty, they had many concerns involving issues of the environment, waste disposal, and protection of the Statues surface itself. Any use of any abrasive material to clean the surface would have been very harmful to the soft copper plates, let alone the waste in the water surrounding the statue. Soda Blasting was invented because it would not only do the job while having a negligible impact on the waterways and harbor, but it was also non-abrasive.

Just like the surface of the Statue of Liberty, this non-abrasive action allows soda blasting to be used on surfaces that currently popular abrasive media would damage. i.e.: aluminum, stainless steel, brick, stone, glass, fiberglass, wood, some plastics, seals, bearings, radiator cores, transmission cases, and hydraulic cylinders. In some cases, using dry blasting, shutdown of electric motors and pumps is not necessary.

### 4. What about the heat build-up that happens when sand blasting?

There is no heat build up with soda bicarbonate. Since there is no heat buildup, warp age is eliminated. Its nonflammable properties allow sodium bicarbonate to be used for cleaning in the petroleum industry where other methods could not be used. Sodium bicarbonate breaks down hydrocarbons, which makes it an excellent method of cleaning engines and engine parts, or other areas where oil and grease are present. Static electricity is a by-product of using high-pressure air and where soda blasting reduces the amount produced, there is still a need to properly ground a metal object when using any blasting media. However, soda bicarbonate does not produce electrical sparks the same way that sand striking metal does.

Another major advantage is the fact sodium bicarbonate does not break the

surface tension of metals, thus the problem of flash rusting is eliminated. Bicarbonate of Soda is also a rust inhibitor which leaves a protective coating on the surface being blasted. This allows for time to pass before the surface has to be repainted. This is unlike a sand blasted surface. That must be repainted immediately. When the time does come to paint the surface, the protective coating can be removed by a light application of either vinegar or citric acid.

5. Would soda-blasting work on graffiti removal?

The removal of graffiti is a difficult and costly operation using just about any conventional method. Sodium bicarbonate provides a very viable alternative to these methods. Since it is a nonabrasive media it can be used to remove graffiti from painted surfaces, in some cases without damage to the base paint. On wood, brick, sandstone, marble and other sensitive surfaces, it will remove the graffiti without leaving any evidence of its use behind.

With the use of a wet blasting system, you would be providing a dust free method of cleaning. Naturally, care must still be taken when setting the pressure, airflow, and media flow as damage can still occur from improper application. Testing in a non-visual area is still a good idea.

6. How do I clean up after I am done, and what about waste disposal?

Sodium bicarbonate has a pH of 8.6 and can be disposed of in most wastewater treatment systems. Disposal regulations should always be followed, as this will vary depending on the contaminant being removed.

Dissolving the spent media and using a filtration system can separate paint chips and other material removed that are not water-soluble. Normally only the hazardous material removed needs to be disposed of in special areas. Sodium bicarbonate can be further neutralized by a vinegar/water solution, Citric Acid solution (less than 3 % acid to water) or just water dilution.

7. Is there any airborne dust that I have to concern myself with?

Yes there will be airborne dust as in any operation involving high-pressure air. Dry blasting creates dust that may have to be contained. Other than the material being removed this dust is not hazardous and the sodium bicarbonate is non-toxic.

Direct inhalation and long-term exposure would naturally cause some discomfort and by rights, you are required to wear a mask. This is where the

term “use common sense” comes into play.

As Sodium Bicarbonate can raise the alkalinity of the soil, when blasting in an area where vegetation is growing it must be neutralized, usually with water dilution, or a vinegar/citric acid and water solution,

The fact that it breaks down hydrocarbons means that care must be taken when used on or near asphalt. As explained above, Sodium bicarbonate leaves a residue that can be neutralized by vinegar or citric acid. Thorough rinsing must be done to ensure a clean surface is left.

8. Do I have to wear protective clothing and masks like sand blasters have too?

As above, a protective mask is suggested. As to protective clothing, not in the usual sense as that which sand blasters wear. You are using pressures up to 150 pounds. It would be a good idea to count on long sleeves and heavy pants to protect against blowback or possibly an error in aim.

9. Do I have to mask off areas like glass or chrome trim like sand blasting requires?

Not always. In fact, unlike the abrasive property of sand, bicarbonate of soda does not harm window glass nor the rubber seals around the glass. However, it may be harmful to certain types of plastic trim, because you are using 150+ pounds of pressure in some instances. For this reason, you may want to remove or protect those possible areas. Of course, you would build this protective measure into your estimate. Of other areas that may need protection; any wood, soft plastic, and parts that are not to be cleaned.

10. Is Bicarbonate Soda or Potassium Sulfate environmentally safe?

As safe as it comes. Of course let's be honest, if you dumped a whole bag of bicarbonate on a plant, it will die. Plants around a remodeling job should be protected and you will need to wash an area down with water during the clean up process.

As explained earlier, for heavy concentrates, you may need to add vinegar to the water as a form of neutralizer. The environment is completely safe, including the waterways and your clients' grass and plants. Mosquitoes and their larva seem to be affected by bicarbonate soda, but that is the only insect that appears to be affected.

Potassium Sulfate (Super K) does have some areas of concern especially in heavy concentrations and may cause gastrointestinal irritation if swallowed. It is also noted that it will cause irritation and skin irritation, so protective clothing and eye protection are necessary.

A must read section is the Materials Safety Data Sheet(s). This will outline in detail any concerns you may have, and contains much of the safety and protection requirements you should follow.

#### 11. How do I remove the left over paint? (Or grease, waste, etc)

Clean up is a snap. You are using bicarbonate of soda, which dissolves in water when you spray the area down. What is left behind will be the waste product. Usually this waste is in such small particles that when it dries, the dust can be vacuumed up. Or, by using an old sheet under a small project, the waste will stay on the sheet. Pick up the sheet and take it away with you.

Disposal of waste may fall under hazardous material classification, especially if you are dealing with old lead based paints or oil, grease, etc. For this reason, you need to check with your local regulations in order to make sure that any disposal will comply with local regulation regarding these materials. Most counties have hazardous disposal sites open to the general public, specifically designed to handle waste oil, paint, and other materials that would fail under the hazardous waste classification. Naturally, the disposal of the waste, and the cost of such disposal become all part of your bid.

#### 12. What warranties come with the equipment?

Provided that normal care and a maintenance schedule practices are followed, the stainless steel body air cylinders are warranted for a period of two years from date of shipment. Valves, air parts and regulators carry a normal 1-year warranty. Other warranties may apply, depending on the component, but you are assured that our interest is to make sure that you have the best quality equipment available, and that any equipment, that has a manufacturers defect, will be replaced.

#### 13. Where can I get my materials when I run out?

We stock all materials and drop ship it to you by the pallet load. We also

stock extra equipment, replacement parts, and marketing and informational materials for use in your business. If your business is to be one that requires you to be in different parts of the country at different times, we can arrange distribution points for you where you can pick up your material as needed.

14. Is Soda Blasting hard to learn?

No. It takes only a few minutes to learn how to work with the equipment. By following the instruction within the owners manual, for safe operation, air pressure, and cleaning of the equipment, the average individual, can pick up their equipment, add the sodium bicarbonate to the machine, attach the hose's and start their first job.

Common sense, a little mechanical ability to change the replaceable rubber seals periodically and a little practice is all it takes to produce quality results.

15. What if I want to custom design my own portable system?

Custom equipment can be done. You would need to meet with the design engineer and go over your requirements. From there, the necessary calculation for balance and towing capacities will have to be formulated, to insure that the final product is safe and roadworthy.

16. There are many sand blasters; is the competition too great in my area?

This is where you can shine in your area. For years, sand blasting has been synonymous with paint stripping. The problem is the dust produced in sand blasting is considered unsafe. Professional sand blasters stand a good chance of getting silica lung infections. This same hazard carries over to outdoor blasting, where a passerby could inhale this same silica sand.

From a competitive point of view, stripping cars is just one of the applications you could get into. To overcome some of the competition, you would offer car paint stripping on the owner's site, which is something that your competition normally cannot do.

Even if you decide to not strip vehicles, you still have an environmentally safe service. You also have a stripping product that is *non-abrasive*; therefore, it can be applied to many surfaces, something that a sand blaster cannot do. Develop your marketing along the lines of the environmental aspect, and you have opportunities that far exceed that of the competition. How about home remodeling, log home restoration, or antiques, just to name a few.



17. You mentioned antiquing. Explain.

For years, woodworkers have taken sand blaster to furniture or raw unfinished wood. The effect produced has been to make the furniture, exterior doors, and other fine finishes appear that it was made from driftwood or wood left out in the desert. Home remodeling, where the entire wood finish is antiqued is a growing business. An imaginative individual can think of many applications where this method can be applied. The results are not only a business that is fun to do, but also one that is very lucrative and easy for the individual hobbyist or “Do it Yourselfer”.

18. Why can't I just put soda bicarbonate into an existing sand blaster and use it that way?

You probably could, assuming you had the right size nozzle and correct air pressure, but even then, you would also lose more material and time than what would be considered reasonable. An explanation of this involves a little knowledge on air pressure, condensation and equipment design.

Condensation: The simple act of compressing air and then releasing it under high pressure produces condensation. Condensation (water) in any form will naturally dissolve the soda bicarbonate. This will result in your media pot eventually clogging up to the point where no material will get through. You will have to stop and dump the wasted soda.

Another problem occurs with the size of the nozzle required. Most DIY or commercial sand blasters have a nozzle size designed for blowing silica sand. This is usually smaller in diameter, than the particles of commercial grade - soda bicarbonate. Naturally, you won't be doing much blasting when the nozzle clods up.

BIA's blasting equipment has taken years of R&D to come down to the design we use today. The K20 and ISP 1500 blasting pots are better than any on the competitive market because of the patented design changes they underwent over the years. They are designed to use 99% of the media in the pot, which save you money and time.

19. Why is BIA's equipment so much better?

There are many reasons, but they all fall into the care and thinking that went into the design of the units.

The ISP 1500 is designed so that a normal person, one with average

strength, can hold a blasting hose for a, extended period, without suffering fatigue. We can explain why this is important in detail when you call but briefly:

*Point 1* Waste: A bag of soda media at 110 pounds of pressure with a #5 nozzle, will take about 45 minutes before the pot would be empty. The average person will want to rest their arms about every 15 minutes into a spray operation. With some of the competitor units, because of the condensation build up, condensation action is detrimental. Results. More media used, less profits.

*Point 2* Payroll: Larger units, carrying 4 or more bags of media, at first appear to be better for larger operations. Let's look at it in real use situations however. You will need to hire a large crew of weight lifters, who can shift the hose back and forth between members, and blast away for many hours, Results. More employees, and less profits, just to remain competitive.

For the owner/operator just the above two point alone are a simple way of stating, "I have to have more payroll, more material to compensate for the condensation loss, and I will make less profits."

*Point 3* Safety: BIA's commercial grade pot is also safer than the competitors. Most competitors' pots on the market today are redesign of sand blasters. You put sand into the unit, start up the compressor and pressurize the pot to 120-200+ pounds. In using soda, the competitors units do the same thing, just substituting soda for sand. Place a redesigned blasting nozzle on it, with an increased nozzle and hose size, and they called it a soda blaster.

Our pot was designed from the beginning to be a soda blaster. Even then, we do not pressurize the pot to the 120-200+ pressure ranges that the competitors do. This is the cause of too much condensation and an eventual waste of media. This design charges the pot with only about 5 to 15 pounds of pressure, more than enough to move the media through the hose. The balance of the air pressure is mixed with the soda at the patented designed gun. For safety against an error in judgment or misuse, each pot has a pressure relief valve that, coupled with its added strength, reduces the risk of pressure blow out.

In addition, BIA makes sure that each unit comes equipped with a after cooler system, that reduces the chance of condensation in the pot. This after cooler lowers the compressed air temperature down to about the same temperature as the surrounding air. With the same temperature at the surrounding air, the chance of condensation build up is reduced to almost zero.

## Chapter 12

## **ProMaxxx Abrasive Blast**

BIA is proud to be offering our ProMxx Abrasive Blast. We have been searching for an abrasive blasting media that is both cost effective and environmentally friendly. Our search also required a flexible media allowing multiple profiles. We have found it with our ProMaxxx Abrasive blast. This blast media flows excellent through our Coatings Removing System, and through extensive testing is the most uniform product available

### **What is ProMaxxx Abrasive Blast?**

ProMaxxx Abrasive Blast is post consumer-recycled glass. It is recycled and sized to meet specific blasting needs. It is made up of sharp angular particles, yet it is safe for handling and loading. It does not feel like glass, it feels like salt for the # 30 course and talcum powder for the # 80 extra fine. It comes in 4 sizes and can be shipped in either 50 lb bags, or 2000 lb super sacks.

### **What are the benefits to using ProMaxxx Abrasive Blast?**

Because of its consistent sizing, it can produce many different profiles, making it a good choice for the blaster who has a wide variety of customers. It is excellent for removing a wide variety of coatings. It is especially well suited for removing epoxy, alkyds, vinyl, polyurea, coal tar, and elastomerics. Because of the efficiency of our equipment combined with the uniform sizing of the media, you can expect 40 to 70% less consumption than traditional abrasive blasting. Unlike many other alternatives to sand there are no heavy metals present when blasting with glass. There are significant benefits in corrosion control because of the clean and inert nature of glass.

### **Is it worker and environmentally Safe?**

Our first concern was based on well-known hazards associated with abrasive blasting. The most feared is Silicosis, a disease produced from the inhalation of Crystalline Silica. This is a direct by-product of sandblasting. As a reference point sandblasting sand has 70% Crystalline Silica. ProMaxxx Abrasive Blast has less than 1% Crystalline Silica. What does that mean for the operator? Well, there is no need to wear a certified fresh air hood. A simple "HEPA" dust mask is the respiratory equipment that is required. If you have ever blasted with a fresh air hood it is bulky and expensive. Also, the area around the blasting site does not have to be completely encapsulated to ensure worker and environmental safety. Another benefit to the worker is bounce back. A term used to describe the rebounding affect of the media being used. Although ProMaxxx Abrasive Blast isn't as friendly as Soda or Super K, it is substantially less than with other abrasives. Some abrasives require body armor to be used, ours requires normal job site clothing: gloves, eye protection, full face "HEPA" mask, long pants and clothes with sleeves.

**What size does Promaxxx Abrasive Blast come in, and what performance can I expect?**

1. ***ProMaxxx Abrasive Blast # 30*** Course; Great for heavy rust and thicker coatings. Effective on structural steel, bridges and tanks. Provides SP 5/Nace No. 1 finish (white metal finish). Produces a 3.0-3.5-mil profile.
2. ***ProMaxxx Abrasive Blast # 40***, Medium; Works very well for rust and coatings. Effective on structural steel, bridges and tanks. Will provide SP 5/Nace No. 1 finish similar to AB # 30 being more effective for detail work like corners, seems and welds. Produces a 2.5-3.0-mil profile.
3. ***ProMaxxx Abrasive Blast # 60*** Fine; Excellent for lighter metals. Working on steel that does not require an aggressive profile. Works very well for preparing frames and other objects for powder coating and industrial paints. Provides SP 5/Nace No. 2 or SP 10/Nace No. 1 finish (white or near white metal finish). Produces a 1.0-2.0-mil profile.
4. ***ProMaxxx Abrasive Blast # 80*** Extra Fine; Great for light duty blasting and cleaning. This Abrasive Blast works well for cleaning mild mil scale and surface rust. Great for sheet metal, stainless and other metals where a brushed finish is desired. Although slower than # 60, it will provide SP 5/Nace No. 2 finish with almost no profile. Produces a 0.5-1.0-mil profile.

## **Chapter 13**

## MATERIAL SAFETY DATA SHEET

PRODUCT NAME:	Soda (Sodium Bicarbonate)
MANUFACTURED FOR:	Blast-It-All
	185 PIPER LANE
	SALISBURY, NC 28147
WEB URL:	<a href="http://www.blast-it-all.com">www.blast-it-all.com</a>
	TELEPHONE: 800-535-2612

### Section I:

#### ***CHEMICAL AND PHYSICAL DATA***

APPEARANCE AND ODOR:	White Solid, Granular; Odorless
BOILING POINT:	N/A
MELTING POINT:	Decomposes
VAPOR DENSITY:	(Air=1): N/A
SPECIFIC GRAVITY:	2.20 (H*20=1)
EVAPORATION WEIGHT AND REF:	N/A
SOLUBILITY IN WATER	9.0% by wt (20c)
pH:	SUPDAT

### Section II:

#### ***FIRE AND EXPLOSION HAZARD DATA***

FLASH POINT	Non-Combustible
UPPER EXPLOSIVE LIMIT	N/A
EXTINGUISHING MEDIA	Water, Water Fog, Carbon Dioxide (CO*2), Dry Chemical
SPECIAL FIRE FIGHTING PROCEDURE	Use NIOSH approved SCBA and full protective equipment (FP N)
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

### Section III:

#### ***REACTIVITY DATA***

STABILITY	Yes
CONDITIONS TO AVOID	Contact with Acids except under controlled
MATERIALS TO AVOID	Reacts with Acids to release Carbon Dioxide Gas and Heat.
HAZARDOUS DECOMP PRODUCTS	None
HAZARDOUS POLY OCCUR	No
CONDITIONS TO AVOID	Not Relevant



**Section IV:**  
**HEALTH HAZARD DATA**

LD50-LC50	SUPDAT
ROUTE OF ENTRY	Inhalation: Yes
ROUTE OF ENTRY	Skin: Yes
ROUTE OF ENTRY	Ingestion: Yes
HEALTH HAZARD ACUTE AND CHRONIC:	No significant health effects anticipated. Acute: Sodium Bicarbonate is a GRAS (Generally Recognized As Safe) food ingredient. No significant toxicity is expected. Chronic: Administration of large doses of Sodium Bicarbonate to patients with Renal Insufficiency can produce Systemic Alkalosis.
CARCINOGENICITY	NTP: No
CARCINOGENICITY	IARC: No
CARCINOGENICITY	OSHA: No
EXPLANATION CARCINOGENICITY	Not Relevant
SIGNS/SYMPTOMS OF OVEREXPOSURE	See Health Hazards
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE	None specified by Manufacturer.
EMERGENCY/FIRST AID PROCEDURES	<b>Eyes:</b> Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention. <b>Inhalation:</b> Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention. <b>Ingestion:</b> Drink plenty of water. Never give anything by mouth to unconscious person. If any discomfort persists, obtain medical attention. NOTES (SUPDAT).

**Section V:**  
**PRECAUTIONS FOR SAFE HANDLING**

STEPS IF MATERIAL IS RELEASED OR SPILLED	Sweep up as much as possible for salvage or disposal. Wash away residue with water.
NEUTRALIZING AGENT	None specified by Manufacturer
WASTE DISPOSAL METHOD	If material cannot be salvaged, an acceptable method is to dispose of uncontaminated product into a secured landfill in accordance with all Local, State and Federal Environmental Regulations. Empty Containers may be incinerated or discarded as general trash.
PRECAUTIONS-HANDLING/STORING	Store in a cool, dry area, away from acids. Use general room dilution or local exhaust vent when excessive dust is expected in the work environment.
OTHER PRECAUTIONS	Use air conveying/mech systems for bulk transfer to storage. For manual handling of bulk transfer use mech vent to remove airborne dust from railcar, ship or truck. Use NIOSH approved resp protection when vent systems are not available. (SUPDAT)

**Section VI:**  
**CONTROL MEASURES**

RESPIRATORY PROTECTION:	Wear NIOSH approved dust respirator if excessive visible dust levels are expected
VENTILATION:	Use local or general room ventilation to control airborne dust that may be generated into the work environment.
PROTECTIVE GLOVES:	General Purpose Gloves
EYE PROTECTION:	ANSI approved CHEM workers goggles (FP N)
OTHER PROTECTIVE EQUIPMENT:	ANSI approved eye wash & Deluge shower (FP N) Full Cover Clothing.
WORK HYGIENIC PRACTICES:	Minimize eye and skin contact by using appropriate protective equipment.

## **MATERIAL SAFETY DATA SHEET**

PRODUCT NAME:	Super K
MANUFACTURED FOR:	BLAST-IT-ALL
WEB URL:	<a href="http://www.blast-it-all.com">www.blast-it-all.com</a>
	TELEPHONE: 800-535-2612

### **Section I:**

#### ***MATERIAL IDENTIFICATION AND USE***

CHEMICAL NAME:	Potassium Sulphate
MOLECULAR WEIGHT:	174
MATERIAL USE:	Industrial, Chemical and Agricultural

### **Section II:**

#### ***INGREDIENTS OF MATERIAL***

INGREDIENTS:	K2S04
APPROX. CONCENTRATION:	94-99.9%
C.A.S. No.'s:	7778-80-5
EXPOSURE LIMITS:	Not Available
SPECIES AND ROUTE:	None reported, LDE (human, oral) 800 mg/kg

### ***Section III:***

#### ***PHYSICAL DATA***

PHYSICAL STATE:	Solid
APPEARANCE:	Off-white to beige, powder/ granules
ODOR:	None
ODOR THRESHOLD:	Not Available
SPECIFIC GRAVITY:	2.66
VAPOR PRESSURE:	Not Available
VAPOR DENSITY:	Not Available
EVAPORATION RATE:	Not Available
BOILING POINT:	1889
FREEZING POINT:	1072
SOLUBILITY IN WATER:	@200C –12%
% VOLATILE (by volume)	None
pH	Neutral
DENSITY: (loose)	1362-1458
COEFFICIENT OF WATER/OIL DIST:	Not Available

**Section IV:****FIRE AND EXPLOSION HAZARD OF MATERIAL**

<i>Flammable: No</i>	<i>Flash Point: Not applicable</i>
<i>Means of Extinction: Not applicable</i>	<i>Upper &amp; Lower Explosion Limit: Not applicable</i>
<i>Special Extinguishing Procedure: None</i>	<i>Auto Ignition Temperature: Not applicable</i>
<i>TDG Flammability Classification: None</i>	<i>Hazardous Combustion Products: None</i>
<i>Sensitivity to Chemical Impact: None</i>	<i>Rate of Burning: Not applicable</i>
<i>Sensitivity to Static Discharge: None</i>	<i>Explosive Power: None</i>

**Section V:  
REACTIVITY DATA**

CHEMICAL STABLE:	Yes
INCOMPATIBLE TO OTHER SUBSTANCES:	No
REACTIVITY:	None
HAZARDOUS DECOMPOSITION PRODUCTS:	None

**Section VI:****TOXICOLOGICAL PROPERTIES OF PRODUCT**

Route of Entry: Skin contact, Eye Contact, Inhalation, Ingestion	<i>Sensitization: Not reported</i>
Effects of Acute Exposure: Minor skin, respiratory tract or eye irritation.	<i>Synergistic Materials: None reported</i>
Effects to Chronic Exposure: May reduce lung function.	<i>Exposure Limit: None established. 1 mg/m3 recommended for nuisance dust.</i>
LD50: Not available	<i>Carcinogenic: No</i>
LCEO: Not available	<i>Reproductive Effects: No</i>
Irritancy: Causes minor eye and skin irritation	<i>Teratogenic: No</i>
Mutagenic: No	

**Section VII:****PREVENTATIVE MEASURES**

Personal Protective Equipment: Dust mask for dusty conditions.	Handling Procedures: Avoid generating dust by unnecessary or excessively vigorous movements.
Engineering Controls: Use local or area ventilation to remove dust.	Storage Requirements: Keep dry, avoid contact with carbon steel and aluminum.
Spill Procedures: Place in containers or vehicle with shovels or loaders, flush area with water.	Shipping Information: Keep Covered.
Waste Disposal: Uncontaminated material may be used as fertilizer. Waste may be disposed of in	

suitable landfill in accordance with applicable regulations.	
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**Section VIII:**

***FIRST AID MEASURES***

Skin: Flush with water, obtain medical attention if rash develops.	Inhalation: Obtain medical advice if symptoms persist.
Eye: Flush with running water for at least 15 minutes, obtain medical attention.	Ingestion: Ingestion of large amount usually causes purging of the stomach by vomiting

## Chapter 15

### MATERIAL SAFETY DATA SHEET

PRODUCT NAME:	PROMAXXX ABRASIVE BLAST
MANUFACTURED FOR:	<b>BLAST-IT-ALL</b>
	<b>185 PIPER LANE</b>
	<b>SALISBURY, NC 28147</b>
WEB URL:	<a href="http://www.blast-it-all.com">www.blast-it-all.com</a>
	<b>TELEPHONE: 800-535-2612</b>

**Section I:**

***CHEMICAL AND PHYSICAL DATA***

APPEARANCE AND ODOR:	No odor, Off-white
PHYSICAL STATE:	Solid
BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
SPECIFIC GRAVITY:	N/A
EVAPORATION RATE:	N/A
SOLUBILITY IN WATER	Negligible
FREEZING POINT	N/A
ODOR THRESHOLD:	N/A

**Section II:**

**FIRE AND EXPLOSION HAZARD DATA**

FLAMMABLE	NO
UPPER EXPLOSIVE LIMIT	N/A
EXTINGUISHING MEDIA	Carbon Dioxide, Dry Chemical, Water Spray and Foam.
SPECIAL FIRE FIGHTING PROCEDURE	Firefighters should wear self-contained breathing apparatus and full protective clothing. Use extinguishing media appropriate for surrounding fire.
UNUSUAL FIRE AND EXPLOSION HAZARDS	None

**Section III:*****REACTIVITY DATA***

STABILITY	Yes, stable at ordinary temperatures. Hazardous polymerization will not occur.
INCOMPATIBILITY WITH OTHER SUBSTANCES	Hydrofluoric acid, strong oxidizing agents, and strong alkalis.
MATERIALS TO AVOID	Avoid contact with strong acid, alkalis or oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon

***Section IV:******HEALTH HAZARD DATA***

LO50-LO50	SUPDAT
ROUTE OF ENTRY	Skin Contact: No
ROUTE OF ENTRY	Skin Absorption: No
ROUTE OF ENTRY	Eye Contact: Yes
ACUTE INHALATION:	No
CHRONIC INHALATION:	Yes
INGESTION:	No
CARCINOGENIC:	No
EFFECTS OF ACUTE:	<b>Eyes:</b> None known. However, dust may cause irritation to the eyes due to abrasion.
EXPOSURE TO THE PRODUCT:	<b>Skin:</b> None known. However, may cause irritation. <b>Inhalation:</b> Dust may irritate the respiratory tract. <b>Ingestion:</b> None known. May cause irritations.

***Section V:******FIRST AID***

SKIN:	Wash thoroughly with plenty of soap and water. If irritation persists, consult physician.
INHALATION:	Remove source of contamination or move victim to fresh air. If breathing stopped, begin artificial respiration. If breathing is difficult, administer oxygen. If necessary, call a physician.
INGESTION:	Drink 2 glasses of water. DO NOT induce vomiting. DO NOT give anything by mouth to an unconscious person. Seek medical advice.
EYE:	Immediately flush thoroughly with plenty of water. Holding eyelids open. Get medical attention if irritation persists.
GENERAL ADVICE:	Avoid prolonged inhalation of dusts, avoid contact with eyes, on skin or clothing. Wash hands thoroughly before eating and drinking. Do not eat, drink or smoke in work area, prevent dust formation, maintain good housekeeping and use with adequate ventilation to maintain below TLV.

**Section VI:**  
**PROTECTIVE EQUIPMENT**

PERSONAL PROTECTIVE EQUIPMENT	If work practices and engineering controls are not effective in controlling exposure to this material, then wear suitable protective equipment.
GLOVES	Not normally required. For prolonged skin contact: any impervious gloves.
RESPIRATORY:	NIOSH approved particulate mask (N95 or better) to control exposure within exposure limits.
EYES:	Safety glasses.
FOOTWEAR:	DO NOT wear sandals or shoes that leave skin exposed.
CLOTHING:	Any appropriate protective body clothing to minimize contact with exposed skin.
OTHER:	Have safety shower and eye wash available near the work area.

**Section VII:**  
**HANDLING PROCEDURES**

LEAK AND SPILL PROCEDURES:	Wear appropriate respiratory and protective equipment. Contain spill. Prevent dust formation. For large spills, use wet sweeping methods or use vacuum equipped with a heap filter. Sweep up or shovel into clean, dry container and remove from area. If necessary, flush spill area with water.
WASTE DISPOSAL:	Dispose of in accordance to all Local, Provincial and Federal Regulations. Can dispose of material in a licensed landfill.
HANDLING PROCEDURES AND EQUIPMENT:	Avoid prolonged or repeated breathing of dust. Prevent dust formation. Keep away from water or moisture.
STORAGE REQUIREMENTS:	Store in a cool, dry, well-ventilated area. Keep containers tightly closed. Isolate from incompatible materials, especially oxidizers.
SPECIAL SHIPPING INSTRUCTIONS:	Shipped as: Chemicals, N.O.S., Labeled as: Not Regulated.

