



presents

The **Art** of
Soda
BLASTING

Tech Guide



SODA BLASTING:

ARMEX® Blast Media full

Often the most expensive part of any full car restoration project is the paint stripping cost. You want to start with bare metal for the best results. What could be better than starting with a "factory finish?" That is how proponents of using ARMEX® Blast Media describe the surface following soda blasting.

ARMEX, from the makers of ARM & HAMMER® products offers various formulations to strip clean almost any car surface including, steel, aluminum, Fiberglass®, and other plastics to provide that flawless surface for your classic finish.



>> WHY USE SODA?

Soda is granular, suitable for use in pressure pots or in cabinet systems.

- Soda crystals are sharp, providing outstanding cleaning/stripping performance when delivered under relatively low pressure but high velocity.
- Soda is "friable," meaning that it fractures into smaller particles. This increases cleaning performance while softening blasting impact. Unlike other blast media, soda is relatively soft and won't degrade metal surfaces (Moh's hardness of 2.5).
- Soda is non-toxic and non-hazardous, with a nearly benign pH of 8.2.
- Soda is water-soluble and can be thoroughly rinsed from surfaces.
- Soda leaves no hard "grit" that can damage moving parts.

>> RUST REMOVAL

ARMEX® Maintenance and Maintenance XL formulas can remove surface corrosion, but for areas that feature heavy rust, blasting with one of the ARMEX® Profile Formulas is an option. The profile formulas contain a small percentage of aluminum oxide to provide a white metal finish.



TECH STEPS

1. COMPLETELY STRIP DOWN VEHICLE

For best results you want to begin with a bare tub skeleton. Completely remove moldings, trim, and door panels, exposing hard to reach areas and eliminating voids that can trap residue. Bumpers, lights and even glass should be removed. While soda can be used safely on glass and is water soluble for easier rinsing, eliminating areas, like seams where particles can get lodged will simplify the process.

Note: *Unless the vehicle has been completely disassembled (to a bare "tub"), it is essential to seal off any remaining wiring harnesses, fuse block, ignition controllers, gauges, switches or other electrical components to prevent blasting contamination.*



2. SODA BLASTING PANELS

Preferred soda blast equipment involves a dedicated blast pot with 1.5" piping, 1.250" I.D. blast hose and a #6 (3/8" I.D.) Venturi type blast nozzle. A larger nozzle can be used if sufficient air volume is available. Blasting pressure is typically between 40 and 60 psi. The air compressor should provide between 185 and 375 cfm, depending on the nozzle size. Use of a blasting booth or other containment is strongly suggested, to eliminate or greatly reduce dust in the shop. Soda is considered a one-pass media in dry blast applications, and therefore cannot be recycled for another round of blasting.

Soda systems usually require a lower flow rate than other abrasives and therefore total volume of waste generated is generally lower. The soda particles are extremely friable, which means that they fracture upon impact. Other harder abrasives maintain their particle mass and drive into the surface material until they run out of energy. Even glass and plastic bead, considered as "softer" abrasives will begin to fracture at about 45 psi or above. ARMEX on the other hand releases all of its impact energy on the surface, at pressures as low as 20 psi, removing paint or other surface contaminants in the process. It is actually this transfer of energy that does the work. This phenomenon also minimizes friction and heat buildup, reducing the risk of metal warping.

Areas such as door panels, fenders, door jambs, firewalls, and posts, can usually tolerate a higher blasting pressure. Caution should always be taken when adjusting pressure. It is best to start low and increase in small increments until you reach maximum coatings removal without altering the substrate. When blast-





line of baking soda based abrasives from the makers of ARM & HAMMER®

»» ADVANTAGES OF SODA AS A BLASTING MEDIA

As previously stated, unlike harder and more aggressive media such as sand and other mineral slags, baking soda (sodium bicarbonate) is able to strip the substrate to bare metal without abrading the parent surface. Soda media is "softer," only 2.5 on the Moh's Hardness Scale and "friable," which means that the soda crystals break-down upon impact (akin to throwing a snowball against a brick wall as opposed to throwing a rock against the same wall). In fact ARMEX has been extensively studied for its impact on rotational bearings without issue. In addition it is water soluble allowing for complete rinsing which greatly minimizes the risk of residue entrapment in moving or mechanical parts.

Soda is non-toxic and non-hazardous, making its use far safer than most other abrasive or chemical stripping methods.

In addition to paint stripping, refinishing and restoration work, soda is also an outstanding choice for blast-cleaning components such as frames, suspension parts, brake parts, and engine components.

Components such as engine blocks, cylinder heads, and intake manifolds, can be cleaned and then rinsed minimizing concern for particle ingestion that can block fuel lines and passageways. One distinct benefit relates to cleaning an intake manifold (especially a dual plane style manifold). The



danger when using glass bead (or other abrasive media) lies in the concern for particulates becoming trapped inside hidden- or hard-to-reach runner areas, which could lead to disastrous results in a running engine. The potential for water soluble soda entrapment is greatly minimized with a thorough water rinse.

The recommended ARMEX products for auto restoration are Maintenance, Maintenance XL or Maintenance and Maintenance XL with SupraKleen™. These formulations offer either a medium or large particle. The Maintenance formula features a 175 micron baking soda crystal and the Maintenance XL formula features a 275 micron crystal. As with any blasting operation maximum efficiency is reached by using the smallest particle possible to do the work required. The SupraKleen additive available in some formulations of ARMEX acts as a rinse aid. These products can efficiently remove paint, primer and body filler, without causing damage to glass, chrome plating or rubber. Keep in mind that it is important to completely purge your blasting pot if it has been previously used with other types of media. Cross-contamination may occur, so it's best to either remove or mask any glass or chrome plated items or have a dedicated system for soda only.

ing larger panels such as hoods, trunk lids and roofs, a lower pressure range of 40-50 psi is recommended. Increasing the stand-off distance will also lower the pressure impact on the surface. If panel flexing is observed, adjust the psi and stand-off distance as required.

As stand-off distance increases, the pressure at the surface will decrease as will the rate of paint removal. Sacrificing speed, in order to avoid warping panels is a small price to pay. Another important consideration especially when restoring vintage vehicles is to carefully inspect for warping that may have resulted from previous efforts. Do this prior to beginning any sheet metal or body panel work preferably with the customer present, so any existing damage can be noted and discussed. With regards to cosmetic repair, as the soda blast media is fanned across the surface removing paint and primer, the operator can easily decide how much body filler should be removed. Additional blasting passes will progressively remove more of the body filler.

Note: *The pressures noted here relate to vehicles manufactured in the mid-1970s and older, due to the fact that the sheet metal is a heavier gauge and can more easily withstand higher pressures. On newer vehicles extra care and caution is required due to thinner sheet metal, which warps more easily, requiring careful adjustment of blast pressures and stand-off distance.*

Once the blasting process is completed, clean compressed air can be used for the blow down process, paying special attention to crevices and pockets (wheel wells, inside of doors, etc.). Blasting on a rotisserie certainly makes the whole process easier and helps with the fallout of the blow down process.

3. THOROUGH RINSING

Finally the most critical step is to thoroughly rinse the surface a few times. Rinse first with hot, soapy water, then flush with fresh clean water. Following the rinse, you may also wipe the surfaces with a metal prep or vinyl wash to remove any remaining surface contamination.

Other products such as HoldTight™ 102 are popular among car restorers because they not only help to rid the surface of contaminants but offer additional rust protection.

Residue from the ARMEX process can provide some rust protection between stripping and painting but all residues must be thoroughly removed before any coatings are applied.

Since soda blasting will result in a smooth metal surface (unless the metal has been previously scratched or etched), the sheet metal surfaces should then be sanded using a DA and 80-180-grit sandpaper to provide the necessary "tooth" for primer adhesion. Finally, clean the surfaces again to remove any remaining dust prior to applying primer following standard body-prep procedures.



ARMEX BLAST MEDIA FAMILY OF PRODUCTS



■ ARMEK with SupraKleen® Formulas

Combines ARMEK 170 micron/100 grit Maintenance Formula or 270 micron/70 grit Maintenance XL Formula with our patented rinse accelerator, improving cleaning capabilities, simplifying cleanup and providing a cleaner surface fundamental to maximizing new coating adhesion.

■ ARMEK Profile Formula XL

Combines ARMEK 270 micron/70 grit Maintenance XL Formula with 10% 70 grit Aluminum Oxide for heavy rust removal.

TESTIMONIALS

"I tried ARMEK with a door panel to see if it would really work and have never looked back. Soda restores to a factory finish you can even see the chalk marks on the fire wall and blue lines from the weld. It literally reverses time."

Doug Jones

**All Star Auto Body and Restoration LLC
Lakewood, NJ**

"The best thing about using soda is that eliminates the surface damage of more aggressive grits and the drudgery of chemical stripping, not to mention the respiratory problems and skin burns."

**Terry Redmond, Blaster Master
ARMEK Distributor
Milton, ON Canada**

"ARMEK has finally provided the most efficient and environmentally safe way to provide a clean foundation for painting."

**Ron Baer Jr.
Baers Automotive
BASF COLORSOURCE Distributor**

"Using solvent or waterborne paint requires great preparation for that ultimate finish. Before painting, it's important to have the surface exceptionally clean and neutralized, and be free of any contaminants. ARMEK soda blasting accomplishes this. If the right steps are taken this is a great process."

David Kidd

**Product Manager
Sherwin Williams Automotive Finishes**

"Soda blasting with ARMEK is the ultimate way to clean and strip parts and body panels. It saves a lot of time, which is a benefit to my shop. Once the part has been soda blasted, it just needs to be prepped according to the paint manufacturer's recommendations, and you're done. It's that simple."

**Rob Ida
Ida Automotive**

Air Consumption Chart (scfm)

Nozzle Number	Orifice Size	Nozzle Pressure (PSIG)										
		20	30	40	50	60	70	80	90	100	110	120
4	1/4"	31	40	48	57	66	75	84	93	103	111	119
6	3/8"	69	89	109	129	149	169	189	209	229	249	269
8	1/2"	123	158	194	229	265	300	336	371	407	442	478

The ArmaKleen Company™

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