

BONDERITE®

**ACID INHIBITORS
FOR INDUSTRIAL
CLEANING AND
COMPOUNDING**

Henkel

Henkel Adhesive Technologies

BONDERITE® S-AD ACID INHIBITORS ARE FORMULATED TO INSURE COST-SAVING DEPENDABILITY, WITHOUT SLOWING PRODUCTION.



Features and Benefits

CLEANING

BONDERITE® S-AD acid inhibitors are the most trusted and widely used for removing scale, rust and other deposits from industrial equipment and systems.

BONDERITE® S-AD formulations are designed to provide consistent, superior protection to the base metal during acid cleaning operations without reducing productivity.

Henkel offers a full range of inhibitors designed for use in most acid cleaning applications. Products are available to protect most metals, including ferrous metals and galvanized surfaces.

THE CLEANING CHOICE FOR:

- Refineries
- Power plants
- Pulp and paper processing
- Petrochemical plants
- Chemical plants
- Water treatment
- Cracking towers
- Steam generation units
- Continuous digesters
- Cooling and process towers
- Heat exchangers
- Pumping stations
- Mining
- Striplines
- Food equipment (NSF® Approved)

SUSTAINABLE INHIBITORS

- Maximum performance with hydrochloric acid
- Low toxicity
- APE-free
- Superior health and safety ratings
- Maximum performance with EDTA and citric acid
- Excellent solubility in concentrates
- Over 98.5%+ inhibition in cleaning solutions
- Compatible for use on mild, stainless and Monel™ alloys

PICKLING



- Whether your pickling operation utilizes hydrochloric acid or sulfuric acid, BONDERITE® S-AD inhibitors provide a wide range of advantages, including:
- Improved finish and appearance
- Improved efficiency
- Reduced iron build-up and spent acid
- Elimination of over-pickling
- Minimization of smutting, pitting and burning
- Reduced fuming
- Minimization of hydrogen embrittlement
- Ability to maintain line speed
- Helps protect equipment

THE PICKLING CHOICE FOR:

- Sulfuric acid
- Hydrochloric (muriatic) acid
- Phosphoric acid
- Formic acid
- Sulfamic acid
- Citric acid
- Hydroxyacetic acid
- Glycolic acid
- Ammoniated EDTA




A Wide Range of Materials and Constant Innovation to


BONDERITE® S-AD ACID INHIBITORS FOR CHEMICAL CLEANING				
PRODUCT	ACID	TEMPERATURE	RECOMMENDED BONDERITE® APPLICATION RATE	REMARKS
BONDERITE® S-AD 31A™ (liquid)	Acetic, Citric, Formic, Sodium Bisulfate, Oxalic, Hydroxyacetic-Formic, Phosphoric, Sulfuric, Sulfamic, Tartaric, EDTA, Hydrofluoric	to 180°F	1 to 4 gallons per 100 gallons of concentrated acid	Low chloride <50ppm
BONDERITE® S-AD 50™ (liquid)	Hydrochloric	to 200°F	1 to 3 gallons per 1,000 gallons of diluted acid	Cleaning grade; non-foaming
BONDERITE® S-AD 85™ (liquid)	Acetic, Citric, Formic, Sodium Bisulfate, Oxalic, Phosphoric, Sulfuric, Sulfamic	to 195°F	1 to 4 gallons per 100 gallons of concentrated acid or 1 to 4 gallons per 100 pounds of powdered acid	High temperature stability; low-foaming
BONDERITE® S-AD 102™ (powder) 	Sodium Bisulfate, Sulfamic	to 180°F	1.5 to 5 pounds per 100 pounds of powdered acid	Low toxicity; all ingredients <i>generally regarded as safe</i> ; NSF®-approved for food processing
BONDERITE® S-AD 103 NPF™ (liquid) 	Acetic, Citric, Formic, Hydrochloric, Oxalic, Phosphoric, Sodium Bisulfate, Sulfamic, Sulfuric, Tartaric	100°F to 150°F	2 gallons to 4 gallons per 1,000 gallons of diluted acid	Low toxicity; all ingredients <i>generally regarded as safe</i> ; NSF®-approved
BONDERITE® S-AD 213 US™ (liquid)	High performance inhibitor for Hydrochloric	220°F	1 to 3 gallons per 1,000 gallons of diluted acid	Lower Toxicity, 99.9% inhibition on CRS with Hydrochloric Acid +99.9% inhibition
BONDERITE® S-AD 221	Acid inhibitor specifically designed for the protection of oil well tubing during acidizing operations	Optional “intensifiers” should be considered if expected use temperatures exceed 250° F (121° C)	For each unit volume of 15% by weight/ volume of hydrochloric acid solution (HCl)	It is expected to retain the significant acute aquatic toxicity associated with similar typed of products
Inhibitor Test Kit	To determine if acid solutions are properly inhibited	An industry standard	Includes instructions and all necessary equipment except hotplate and stopwatch	

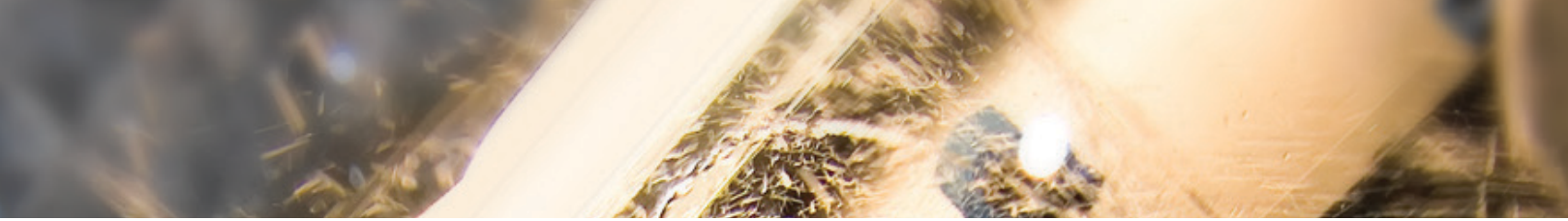
Meet the Ever-Changing Needs of Industry

BONDERITE® S-AD CONCENTRATION RECOMMENDATIONS FOR ACID PICKLING APPLICATIONS					
ACID	METHOD	TEMPERATURE	PRODUCT	VOLUME OF BONDERITE® S-AD BASED ON CONCENTRATED ACID	REMARKS
Hydrochloric (Muriatic)	Batch Pickling	to 140°F	BONDERITE® S-AD 50™ liquid, non-foaming	1 to 4 pints per 100 gallons	Medium strength inhibitors for general pickling. Excellent for pickling prior to plating.
	Continuous Strip Pickling	to 210°F	BONDERITE® S-AD 3305™ liquid, non-foaming	1 to 3 pints per 100 gallons	Strong inhibitors for continuous pickling. Aids in attaining clean, bright pickled work. Superior performance in high iron content pickle baths.
Sulfuric	Batch Pickling	to 190°F	BONDERITE® S-AD 55™ powder, foaming	100 pounds per 100 gallons	Provides an excellent surface for phosphating. Excellent wetting enables rapid, uniform pickling of tubing, coils or wire, as well as rod and bundles of bars.
		to 195°F	BONDERITE® S-AD 85™ liquid, low-foaming	1 to 4 pints per 100 gallons	A strong general-purpose inhibitor. Superior stability at high pickling temperatures.

PICKLE BATH ADDITIVES			
PRODUCT	FORM	ACID	BENEFIT
BONDERITE® S-AD 6™	Liquid	Sulfuric	Extends life of pickle bath.

FOR HYDROBLASTING OPERATIONS			
PRODUCT	APPLICATION	AMOUNT	REMARKS
BONDERITE® L-GP 501™ 	To prevent flash rust during water blasting operations	0.1% for UHP 1.0% for pack sprayer	Provides up to 48 hours protection prior to painting

FOR WELL ACIDIZING			
PRODUCT	ACID	AMOUNT	REMARKS
BONDERITE® S-AD 102™ (powder) 	Sodium Bisulfate, Sulfamic	1.5 to 5 pounds per 100 pounds of powdered acid	Powdered product for water well acidizing
BONDERITE® S-AD 103 NPF™ (liquid)	Acetic Citric, Formic, Hydrochloric, Oxalic, Phosphoric, Sodium Bisulfate, Sulfamic, Sulfuric, Tartaric	2 gallons to 4 gallons per 1,000 gallons of diluted acid	Liquid product for water well acidizing



***SPECIALIZED ACID
INHIBITORS FOR SAFE,
EFFICIENT CHEMICAL
OPERATIONS***



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