BONDERITE®

Surface Treatment

Aerospace Product Selector Guide

Henkel

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Surface Treatment

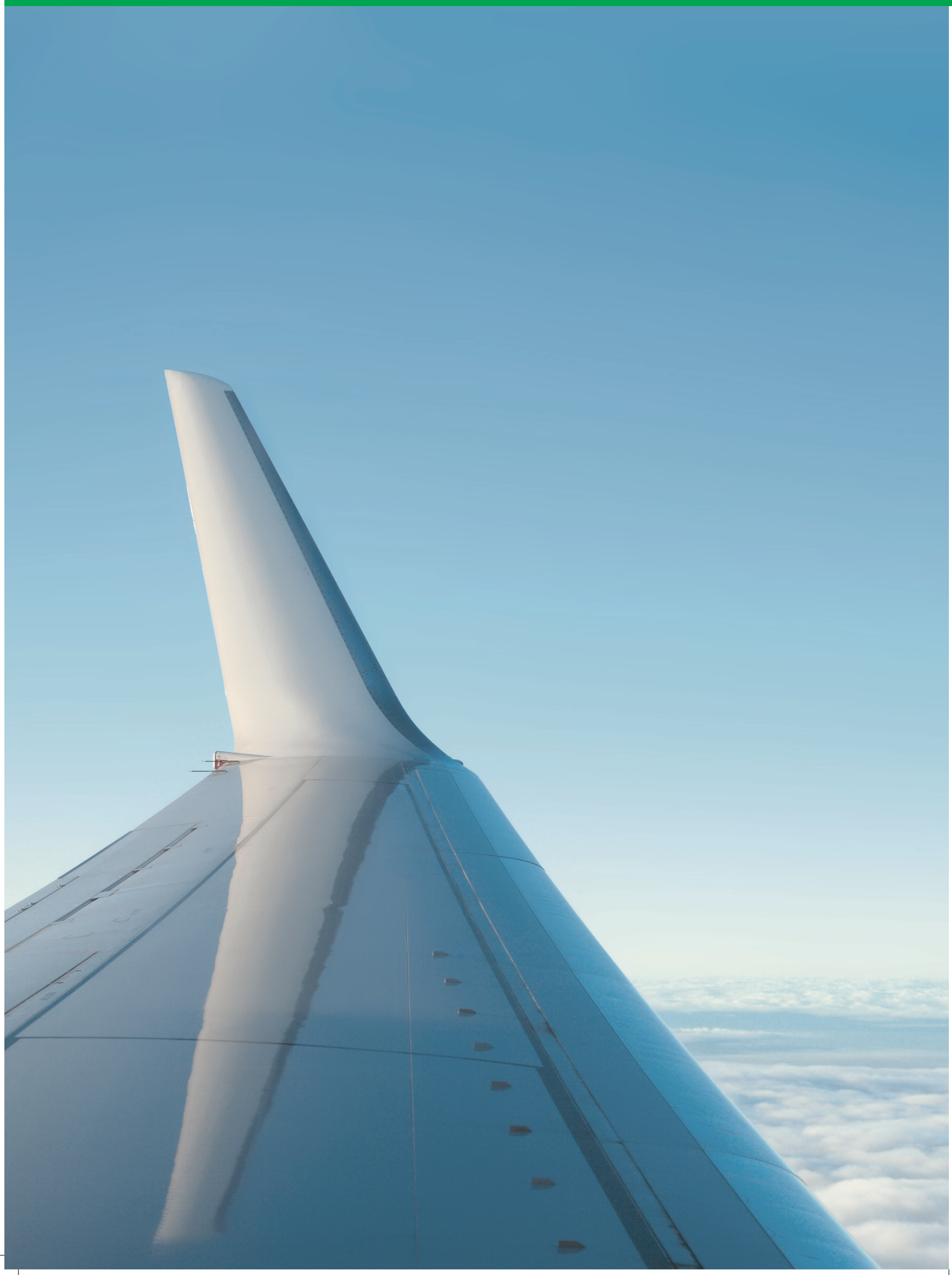
BONDERITE – delivering value and total surface treatment solutions for all your aircraft and engine requirements

Choose from our broad surface treatment portfolio

Aircraft structures, parts and engines require high-quality surface treatment solutions to ensure a safe and reliable fleet for airline operators. Henkel, as a proven surface treatment solutions supplier, provides a broad portfolio of products throughout the aerospace supply chain. It includes cleaners, paint strippers, conversion coatings and engine overhaul products. As a leader in sustainability best practices, Henkel offers environmentally advantaged product options for the aerospace industry's leading platforms.

Benefit from our industry proven expertise

BONDERITE products come along with Henkel's many years of proven aerospace industry experience and know-how. Take advantage and benefit from Henkel's leading products and expertise for your aerospace-grade surface treatment needs.



Covering the entire metal pretreatment process:

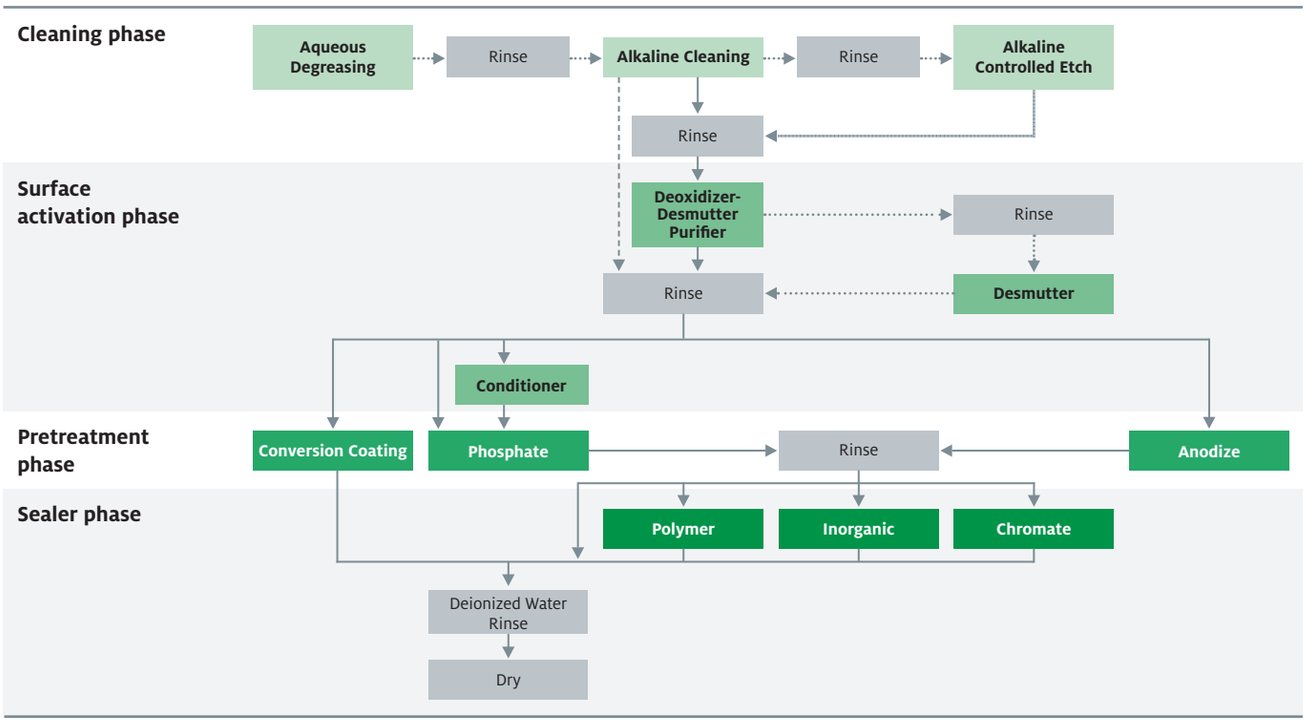
BONDERITE metal pretreatment solutions

Metal Pretreatment: Essential for the longevity of your airframe and aerospace parts

Before bonding, sealing or painting, aircraft parts require a consistent metal pretreated surface that fulfills all of your process requirements. This includes all stages of metal pretreatment from cleaning and degreasing to conversion coating.

From cleaners to conversion coatings: BONDERITE covers it all

With more than seven decades of metal pretreatment experience, Henkel's BONDERITE solutions cover all steps of the surface treatment process: Cleaners and alkaline etchants for the cleaning phase, deoxidizers and desmutting products for the activation phase and conversion coatings for the surface treatment phase. On the following pages, we will introduce you step-by-step to Henkel's aerospace-grade product offerings.



Metal surface treatment typical process

In a class of its own:

BONDERITE cleaning products

for all your aircraft and component cleaning requirements

No aircraft preparation without cleaning ...

A clean surface is essential for all aircraft applications, as it improves the corrosion performance and optimizes contact bonding and sealing of parts. Henkel's broad portfolio of leading BONDERITE cleaning products provides value and dependability for all our customers' needs.

Based on our long history in supplying the aerospace industry, Henkel provides proven solutions for all your cleaning requirements, accompanied by world-class technical expertise and numerous training modules.

... and no cleaning without BONDERITE.

Henkel's BONDERITE range meets many leading OEM process requirements, with aqueous and solvent-based cleaners to remove dirt, grime or impurities from a surface and to deliver optimal performance every time. With BONDERITE, you will always find the appropriate solution to remove surface contaminants like dirt and grease.

Why choose BONDERITE cleaners?

- Easy to maintain bath solutions
- Aerospace grade solutions with OEM qualifications
- Complete surface treatment product portfolio
- Long bath life

BONDERITE cleaning products:
Facts at a glance

Key factors to consider when choosing the right BONDERITE cleaner

- All products must meet OEM process specification requirements, as metal parts and gasket seals can be attacked and destroyed by cleaning chemicals
- Optimal cleaning solution for your process requirements
- Ensure a clean and “water-break”-free surface
- Soil types (Organic or Inorganic)
  - Rust preventives
  - Lubricants
  - Oils
  - Polishing or buffing compounds
  - Inks
  - Oxides
  - Dirt, grease and grime

Cleaners classification

Alkaline Etch (pH > 12)

- Slight to heavy attack of aluminum or metal removal
- Cleaning is enhanced through the evolution of hydrogen gas
- Provides change to the metal appearance

Alkaline Non-Etch Cleaner (pH > 10)

- Inhibited solutions

Neutral, Low Alkaline Non-Etch Cleaner (pH 7 – 10)

- Non-inhibited alkaline solutions
- No adverse effects if allowed to dry on aluminum

Acid (pH < 7)

- Acids chemically break down soils
- Bath can produce surface attack
- Surface attack is controlled by product concentration, temperature and contact time

Solvent

- Safe to use on a wide array of metals
- Good vapor degreaser
- Ideal wiping cleaner
- May attack painted or plastic surfaces

Metal Pretreatment: Cleaners

Applications	Immersion for Parts	•	•	•	•
	Spray / Brush		•		
	Spray Recirculate				
	Wipe				
Substrate	Aluminum	•	•	•	•
	Magnesium			•	•
	Magnesium – Die Cast			•	
	Mild Steel				
	Stainless Steel		•	•	•
	Titanium	•	•	•	•
	Ferrous		•	•	•
	Nonferrous				
Product Characteristics	Consistency	Liquid	Powder	Liquid	Liquid
	Form	Concentrated	Concentrated	Concentrated	Concentrated
	Chemistry	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based
Process (Immersion)	Time (Minutes)	3 – 15 Minutes	3 – 15 Minutes	3 – 15 Minutes	Varies as Needed
	Temperature °F / °C	130 – 180°F 54 – 82°C	120 – 140°F 49 – 60°C	110 – 160°F 43 – 71°C	131 – 158°F 55 – 70°C
	Mix Ratio (Product : Water)	4 y – 10% v / v	5 – 8 oz. / gal.	5 – 25% v / v	10 – 20% v / v
Process (Spray)	Time (Minutes)	–	1 – 3 Minutes	–	–
	Temperature °F / °C	–	120 – 140°F 49 – 60°C	–	–
	Mix Ratio (Product : Water)	–	1 – 4 oz. / gal.	–	–
Products	New Product Name	**BONDERITE C-AK 298™ AERO**	**BONDERITE C-AK 4215™ NC-LT AERO**	**BONDERITE C-AK 4355™ AERO**	**BONDERITE C-AK 6849™ AERO**
	Known as	Ridoline® 298™	Turco® 4215™ NC-LT	Turco® Ridoline® 4355™	Turco® 6849™
Regional Availability & Packaging	Asia Pacific	–	Drum, Pail	–	Drum
	Europe / Middle East / Africa	–	Pail	–	Drum, Pail
	Latin America	Drum	Drum, Pail	Drum	Drum
	North America	Bottle, Drum, Pail, Tote	Bottle, Drum, Pail	Bottle, Bulk, Drum	Bottle, Bulk, Drum, Tote
Description		**BONDERITE C-AK 298™ AERO** is a liquid, non-silicated, immersion cleaner for aluminum and its alloys. It is formulated for use in anodizing and conversion coating lines. It is free rinsing and will remove a variety of soils including oils, greases, inks and wax-based markings.	**BONDERITE C-AK 4215™ NC-LT AERO** is a white granular mix developed for cleaning ferrous and nonferrous alloys by spray, immersion and ultrasonic methods at low temperatures. It is ideal for cleaning fuel and hydraulic components, and for cleaning metals prior to metal bonding.	**BONDERITE C-AK 4355™ AERO** is a phosphate-free liquid, immersion-applied, non-etching, cleaning product designed specifically to replace halogenated hydrocarbon vapor degreasers for cleaning aluminum alloys. It is formulated for removal of various soils such as oils, greases, inks and wax-based markings. Its superior cleaning characteristics compared to vapor degreasing provide some amount of interstage corrosion protection.	**BONDERITE C-AK 6849™ AERO** is a clear aqueous alkaline degreaser formulated to remove shop soils, marking inks, Cosmoline brand rust preventive, grease and lube oils from ferrous and nonferrous alloys. It offers both exceptional effectiveness and tank life. It replaces solvent-type vapor degreasing fluids with an effective aqueous cleaner. The costs and hazards normally associated with chlorinated solvent cleaning are thereby greatly reduced.

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•					•	
Powder	Liquid	Powder	Liquid	Powder	Liquid	
Concentrated	Concentrated	Concentrated	Concentrated	Concentrated	Concentrated	
Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline	Acidic	
3 – 15 Minutes	3 – 10 Minutes	Varies as Needed	3 – 15 Minutes	15 – 30 Minutes	3 – 10 Minutes	
130 – 180°F 54 – 82°C	120 – 130°F 49 – 54°C	180°F (min.) 82°C (min.)	100 – 140°F 38 – 60°C	General: 185 – 205°F 90 – 95°C Titanium: 168°F (max.) 75°C (max.)	Ambient	140°F (max.) 60°C (max.)
5 – 12 oz. / gal.	5 – 8% v / v	5 – 12 oz. / gal.	5% – 25% v / v	75 – 100% by volume	25 – 50% by volume	5 – 10% by volume
–	–	–	1 – 3 Minutes	–	–	
–	–	–	120 – 140°F 49 – 60°C	–	–	
–	–	–	3% – 10% v / v	–	–	
BONDERITE C-AK 909™ AERO	**BONDERITE C-AK ALTREX® 24™ AERO**	**BONDERITE C-AK C NVT AERO**	**BONDERITE C-AK LS NP-LT AERO**	**BONDERITE C-AK 4181™ AERO**	**BONDERITE C-IC 4409™ AERO**	
Novaclean 909™	Turco® Altrex® 24™	Turco® C NVT	Turco® Liquid Sprayeze NP-LT	Turco® 4181™	Turco® 4409™	
Drum	Pail	–	Pail	Drum, Pail	Drum, Pail	
Pail	–	–	Drum, Pail	Pail	Drum, Pail, Tote	
Drum	Drum	Drum	–	–	Drum	
Drum	Drum, Pail, Tote	Can, Drum	Drum, Pail	–	Drum, Pail	
BONDERITE C-AK 909™ AERO is a medium-duty, caustic-free immersion cleaner that provides excellent wetting, emulsifying and dispersing properties which are effective in the removal of a wide variety of soils on ferrous and nonferrous metals. In addition, it is safe on steel, aluminum, brass and zinc die castings.	**BONDERITE C-AK ALTREX® 24™ AERO** is an inhibited, non-etching, concentrated liquid alkaline cleaner for cleaning aluminum and its alloys. The product is an effective remover of most soils found on aluminum and other metals. It can be used in a variety of cleaning operations.	**BONDERITE C-AK C NVT AERO** is a heavy-duty, alkaline cleaner for immersion and barrel cleaning operations. It is particularly suited to plating, porcelain enameling and other critical finishing operations which require the utmost in cleanliness. In addition, it has tremendous soil tolerance, and cleans and rinses well even under the heavy soil loads of barrel washing of screw and header machine products.	**BONDERITE C-AK LS NP-LT AERO** is a straw-colored liquid developed to remove shop soil, lube oils, light drawing oils and drawing waxes from ferrous, aluminum, copper and titanium alloys. In addition, it is also suitable for cleaning most magnesium alloys, zinc and cadmium. The product is ideal for precleaning metals prior to phosphating and painting.	**BONDERITE C-AK 4181™ AERO** is a flowing, granular-free product formulated to simultaneously strip paint, dissolve rust, and light heat from jet engine parts. It is used during routine maintenance. It removes carbonatious deposits, phosphate coatings and Semetal W as well as light oils and unwanted lubricant residues.	**BONDERITE C-IC 4409™ AERO** is a clear, colorless liquid acid cleaner and deoxidizer designed for use on ferrous and nonferrous alloys by immersion, spray, and hand wipe methods. It is not intended for use on magnesium alloys and high strength steels.	

Metal Pretreatment: Cleaners

Applications	Immersion for Parts	•	•	•	•
	Spray / Brush	•		•	•
	Spray Recirculate				
	Wipe				
Substrate	Aluminum	•	•	•	•
	Magnesium	•		•	
	Magnesium – Die Cast				
	Mild Steel				•
	Stainless Steel	•	•	•	•
	Titanium	•	•	•	•
	Ferrous	•	•	•	
	Nonferrous	•	•	•	
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Powder
	Form	Concentrated	Concentrated	Concentrated	Concentrated
	Chemistry	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based
Process (Immersion)	Time (Minutes)	5 – 15 Minutes	–	5 – 15 Minutes	3 – 15 Minutes
	Temperature °F / °C	130 – 170°F 65 – 80°C	–	130 – 170°F 65 – 80°C	120 – 140°F 49 – 60°C
	Mix Ratio (Product : Water)	3 – 20% by value	–	3 – 20% by value	5 – 8 oz. / gal.
Process (Spray)	Time (Minutes)	Varies as Needed	5 – 15 Minutes	Varies as Needed	1 – 3 Minutes
	Temperature °F / °C	Ambient	Ambient	Ambient	120 – 140°F 49 – 60°C
	Mix Ratio (Product : Water)	1 part concentrate to 9 – 30 parts water	Use as received	3% – 30% in water	1 – 4 oz. / gal.
Products	New Product Name	**BONDERITE C-AK 5948DPM™ AERO**	**BONDERITE C-AK 5948DPM™ THK AERO**	**BONDERITE C-AK 5948R™ AERO**	**BONDERITE C-AK 4215NC™ AERO**
	Known as	Turco® 5948-DPM™	Turco® 5948-DPM™ Thick	Turco® 5948-R™	TURCO 4215™ NC
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Pail	Drum, Pail	–
	Europe / Middle East / Africa	Drum, Pail, Tot	Pail	Drum, Pail	Pail
	Latin America	Drum, Tot	Drum	Drum, Pail	–
	North America	Bottle, Drum, Pail	Bottle, Drum, Pail	Bottle, Bulk, Drum, Pail	Drum, Pail
Description		**BONDERITE C-AK 5948DPM™ AERO** is an alkaline, water-based, blue concentrated compound formulated to effectively clean painted and unpainted aircraft exterior and interior surfaces when diluted with water. It is ideally suited for use on all models of jet aircraft and is also designed to be used in immersion tanks for dip applications.	**BONDERITE C-AK 5948DPM™ THK AERO** is an environmentally advantaged thixotropic, water-based, heavy-duty aircraft cleaner. It is formulated to effectively cling to painted and unpainted aircraft exterior and interior surfaces. It is ideally suited for use on all jets, especially in baggage bins, flap and wheel well areas, and on engines before overhaul. It can be applied as spray or mop.	**BONDERITE C-AK 5948R™ AERO** is an alkaline, water-based, blue, concentrated compound formulated to effectively clean painted and unpainted aircraft exterior and interior surfaces when diluted with water. It is ideally suited for use on all aircraft large or small parts, and for cleaning engine parts during engine overhaul. It is also designed to be used in immersion tanks for dip applications.	**BONDERITE C-AK 4215NC™ AERO** is a granular mixture developed to clean aerospace metals, including the ones that come in contact with LOX. It is ideal for cleaning fuel, hydraulic components and articles that require adhesive bonding, anodizing and conversion coatings.

Notes

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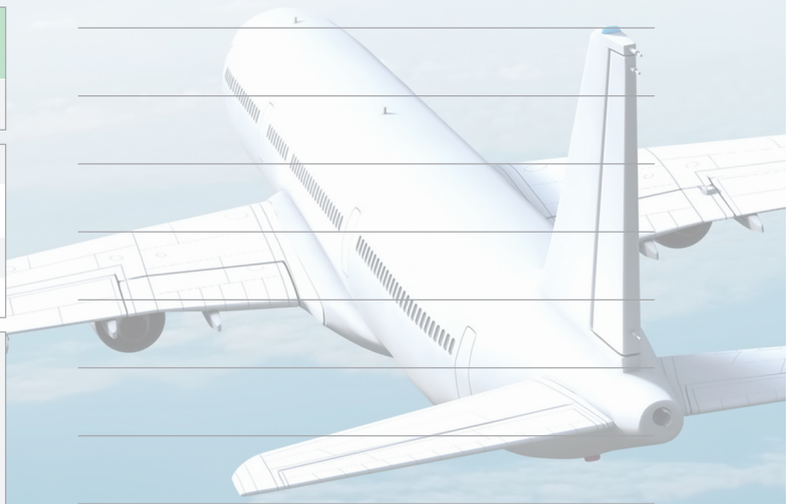
•		•
•		•
Liquid	Liquid	Liquid
Ready-to-Use	Concentrated	Concentrated
Solvent	Alkaline, Water-Based	Alkaline, Water-Based
Until wax is completely softened & dissolved	–	-
50 – 68°F 10 – 20°C	–	-
Used as Received	–	-
–	Varies as Needed	Varies as Needed
–	Ambient	Ambient
–	10 – 20%	1 part concentrate to 3 – 15 parts water
BONDERITE C-MC 6802™ AERO	**BONDERITE C-AK 6871™ AERO**	**BONDERITE C-AK AIR TEC 23™ AERO**
Turco® 6802™	Turco® 6871™	Turco® Air-Tec #23™
Drum	–	Drum, Pail
Pail, Tot	–	Drum, Pail
Drum	–	Drum
Drum	Drum, Pail	Bottle, Bulk, Drum, Pail
BONDERITE C-MC 6802™ AERO is a clear, amber liquid developed to remove platter's wax and similar low melting stop-off compounds by immersion in the heated product. It is free of chlorinated hydrocarbons, phenols, and chromate. It can be used on all metals.	**BONDERITE C-AK 6871™ AERO** is a clear, straw-colored alkaline concentrate designed to be diluted with water to clean painted and unpainted exterior aircraft surfaces by spraying or foaming methods.	**BONDERITE C-AK AIR TEC 23™ AERO** is a clear, straw-colored, alkaline concentrate designed to be diluted with water to clean painted and unpainted exterior aircraft surfaces by spraying or foaming methods. It meets requirements of MIL-C-87936A, Type I.



Metal Pretreatment: Cleaners

Applications	Immersion for Parts			
	Spray / Brush	•	•	
	Spray Recirculate			
	Wipe			•
Substrate	Aluminum	•	•	•
	Magnesium			
	Magnesium – Die Cast			
	Mild Steel		•	
	Stainless Steel		•	
	Titanium		•	
	Ferrous		•	
	Nonferrous		•	
Product Characteristics	Consistency	Liquid	Liquid	Liquid
	Form	Concentrated	Concentrated	Ready-to-Use
	Chemistry	Acid, Solvent	Alkaline, Solvent	Alkaline, Emulsion
Process (Immersion)	Time (Minutes)	–	–	–
	Temperature °F / °C	–	–	–
	Mix Ratio (Product : Water)	–	–	Use as Received
Process (Spray)	Time (Minutes)	–	15 Minutes	–
	Temperature °F / °C	–	68 – 86°F 20 – 30°C	–
	Mix Ratio (Product : Water)	Full strength or 1:2	20% v / v	–
Products	New Product Name	**BONDERITE C-IC METALGLO FF RTU AERO**	**BONDERITE C-AK 5975A™ AERO**	**BONDERITE C-MC 1495™ X AERO**
	Known as	Turco® Metal Glo FF RTU	Turco® 5975-A™	Turco® 1495-X™
Regional Availability & Packaging	Asia Pacific	–	Pail, Drum	Pail
	Europe / Middle East / Africa	–	Pail	Pail
	Latin America	–	–	Pail
	North America	Drum, Tote	–	–
Description		**BONDERITE C-IC METALGLO FF RTU AERO** is a nonflammable, non-fluoride, acid-based cleaner, brightener, deoxidizer and prepaint conditioner for aluminum. It contains viscosity builders that allow for added contact time, enabling this product to remove corrosion products from horizontal and vertical surfaces. It produces a chemically clean, water-break-free and streak-free surface. It can be applied as spray or brush.	**BONDERITE C-AK 5975A™ AERO** is a solvent containing high pressure cleaner and can be used on ferrous and nonferrous alloys. It is suitable as an aircraft exterior cleaner.	**BONDERITE C-MC 1495™ X AERO** is a medium-heavy duty aircraft polish and cleaner. It quickly removes oxide films.

Notes

For a perfect surface finish:

BONDERITE etchants

With etchants, you can achieve an optimum surface appearance

As a specialist, you know that surface preparation is fundamental to paint adhesion, surface bonding and corrosion protection. Therefore, for secondary operations, it is important to prepare metal by cleaning and providing a high-quality, fine satin, etched surface.

With BONDERITE etchants, you can take advantage of optimum process benefits

Besides a high-quality etched surface and lighter weight, BONDERITE etchants make sure that the metal is etched away only in exposed areas. You can dissolve metallic aluminum to gain a smoother, uniform surface appearance while providing an extended bath / tank life for your process.

Why choose BONDERITE Etchants?

- Good for very sharp and defined surfaces
- Controlled etch rates
- Achieve surface smoothness
- Prevent caustic mist from escaping into the workplace

BONDERITE etchants:
Facts at a glance

BONDERITE etchants key features:

- Nonflammable
- Readily mix with cold water
- Produce minimal amount of soft, non-caking sludge
- Operations up to 105°C / 221°F
- Produce uniform etch on most aluminum alloys
- Easily controlled by simple titration

Key factors to consider when choosing the right BONDERITE etchant

- Type of alloy
- Type of chemical milling maskant
- Required specification

Surface preparation

Cleaning

To ensure a uniform etch in the bath containing alkaline etchant, aluminum work pieces must be thoroughly cleaned using a non-silicated cleaner prior to being placed in the etch bath.

Water Rinsing

After cleaning, the metal must be thoroughly rinsed with water, preferably warm. The rinse should be overflowed continuously at a rate which will keep it clean and free from scum and contamination.

Metal Pretreatment: Etchants

Applications	Immersion for Parts				
	Spray / Brush				
	Spray Recirculate				
	Wipe				
	Etchant	•	•	•	•
Substrate	Aluminum	•	•	•	•
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Powder
	Form	Concentrated	Concentrated	Concentrated	Concentrated
	Chemistry	Strong Alkaline	Strong Alkaline	Strong Alkaline	Alkaline
Process (Immersion)	Time (Minutes)	1 – 5 Minutes	10 – 60 Minutes	10 – 60 Minutes	3 – 5 Minutes
	Temperature °F / °C	120 – 180°F 49 – 82°C	167 – 221°F 75 – 105°C	194 – 221°F 90 – 105°C	122 – 158°F 50 – 70°C
	Mix Ratio (Product : Water)	4% – 10% v / v	14, 5% v / v	50% v / v	37.5 to 52.5 g / L of water
Process (Spray)	Time (Minutes)	–	–	–	–
	Temperature °F / °C	–	–	–	–
	Mix Ratio (Product : Water)	–	–	–	–
Products	New Product Name	**BONDERITE C-AK EC-202L™ AERO**	**BONDERITE C-AK ETCH 9HL™ AERO**	**BONDERITE C-AK ETCH 17L™ AERO**	**BONDERITE C-AK ALUM ETCH 2 AERO**
	Known as	Turco® Nova EC-202L™	Turco® Form Etchant 9 H-L	Turco® Etchant 17L	Turco® Aluminetch #2
Regional Availability & Packaging	Asia Pacific	–	Drum	Drum	–
	Europe / Middle East / Africa	–	Drum	Drum, Tote	Pail
	Latin America	–	–	–	Pail
	North America	Bulk, Drum, Pail, Tote	Drum	Drum	Drum
Description		**BONDERITE C-AK EC-202L™ AERO** is a liquid alkaline aluminum etch cleaner for immersion applications that will produce a lightly etched finish on aluminum alloys, while simultaneously removing any oils and other soils present on the work surface. It produces a stable foam blanket which effectively entraps the gases evolved during the etching operation. It contains a special blend of detergents and dispersing agents to minimize hard scale formation. Therefore, it makes equipment maintenance a much easier and less costly operation.	**BONDERITE C-AK ETCH 9HL™ AERO** is equivalent to a 50 percent water solution of the dry flake BONDERITE C-AK ETCH 9H AERO. It was developed to provide a convenient means to charge and rejuvenate caustic chemical milling baths for aluminum.	**BONDERITE C-AK ETCH 17L™ AERO** is a specially compounded caustic etchant for use on the majority of aluminium alloys in the chemical milling process.	**BONDERITE C-AK ALUM ETCH 2 AERO** is a white granular mixture formulated to clean light soils and etch aluminum by immersion methods. Its solution has a low surface tension which causes a uniform wetting of the metal surface and produces a smooth matte finish on extrusions, structural shapes, aircraft components and similar aluminum parts.

Notes

	•	•
	Liquid	Liquid
	Ready-to-Use	Concentrated
	Alkaline	Strong Alkaline
	15 – 60 Minutes	15 – 60 Minutes
	175 – 204°F 80 – 95°C	150 – 190°F 66 – 88°C
	75% - 25% v / v	15% – 100% v / v
	–	–
	–	–
	–	–
	BONDERITE C-AK 5578-GL™ AERO	**BONDERITE C-AK 5578-L™ AERO**
	Turco® 5578-GL	Turco® 5578-L
	–	–
	Drum	–
	–	–
	Drum, Tote	Bottle, Bulk
	BONDERITE C-AK 5578-GL™ AERO is a liquid product formulated for alkaline etching on titanium, columbium and tantalum alloys by immersion systems or spray applications. It is an effective etchant prior to adhesive bonding, diffusion bonding, painting, welding and brazing.	**BONDERITE C-AK 5578-L™ AERO** is an amber liquid compound formulated to clean and etch titanium, columbium and tantalum alloys by spray or immersion systems. It readily removes mill soils, marking inks, lube oils, cutting oil and fingerprints at a low concentration and will etch titanium at higher concentrations. It is an effective etch prior to adhesive bonding, diffusion bonding, painting, welding and brazing.

If it has to be cleaner than clean:

Deoxidize and desmut with BONDERITE

Best preparation for bonding and painting: remove everything

For a professional aircraft preparation, oxide layers and smut have to be removed completely before any bonding or painting applications. Both challenges require specific cleaning solutions that consider the alloy and surface condition, the type of conversion coating being used, the environmental regulations and individual customer requirements.

Best choice: BONDERITE

It offers exactly the solution you need. Regarding oxides, the high-quality BONDERITE deoxidizers remove corrosion products as well as heavy storage oxides or residues. At the same time, its desmutting products completely remove surface deposits. In short: You can depend on Henkel to provide solutions for all your surface treatment needs.

Why choose BONDERITE Deoxidizers and Desmutters?

- Complementary chemical solutions
- Proven performance
- Chrome-free chemical options
- Solutions for a wide variety of applications

BONDERITE deoxidizing and desmutting products: **Facts at a glance**

BONDERITE deoxidizers and desmutters will remove oxides and smut from the substrate

- Corrosion products
- Heavy storage oxides
- Residues of abrasive cleaning
- Remnants of shot peening
- Traces of foreign metal contamination

Necessity of smut removal

Smut is the combination of intermetallics, metals and metal oxides that remain after cleaning and / or etching.

Smut:

- Is loosely adherent to the surface
- Will inhibit proper formation of conversion coating
- Inhibits paint adhesion
- Contaminates processing solutions
- Initiates corrosion

Key factors to consider when choosing the right BONDERITE deoxidizer and desmutter

- Alloy and surface condition
- Type of conversion coating being used
- Environmental concerns and regulations
- Equipment and tank availability
- OEM process requirements
- Process water conditions

Available types of deoxidizers and desmutters

Nitric-based

- Not suitable for silicon alloys (castings)
- Fluoride needs to be added to improve efficiency
- Eventually leads to staining problems
- Can cause fuming

Chrome-based

- Allows for long transfer times
- Longer bath life than nitric based

Iron-based

- Environmentaly responsible
- Good performance

Non-chrome / non-iron based

- Environmentally responsible
- Aids in copper passivation
- Regulatory compliance with REACh

Metal Pretreatment: Deoxidizers and Desmutters

Applications	Chrome	•			
	Iron		•	•	•
	Non-chrome / Non-Iron				
Substrate	Aluminum	•	•	•	•
	Titanium				
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid
	Form	Concentrated, Two Packages	Concentrated, Two Components	Concentrated, Two Components	Concentrated, One Package
	Chemistry	Chromate	Non-Chrome, Non-Iron	Non-Chrome, Non-Iron	Non-Chrome, Iron-Based
Process (Immersion)	Time (Minutes)	1 – 15 Minutes	1 – 15 Minutes	1 – 15 Minutes	1 – 15 Minutes
	Temperature °F / °C	Ambient	Ambient	Ambient	Ambient
	Mix Ratio (Product : Water)	7% v / v D6 M/U, 10% v / v Nitric Acid	10 – 20% v / v D2310, 20 – 30% Nitric Acid	15% v / v Aldox V, 26% Nitric Acid	19% v / v
Process (Spray)	Time (Minutes)	–	–	1 – 15 Minutes	15 – 60 Seconds
	Temperature °F / °C	–	–	Ambient	Ambient
	Mix Ratio (Product : Water)	–	–	15% v / v Aldox V, 26% Nitric Acid	19% v / v
Products	New Product Name	**BONDERITE C-IC DEOXDZR 6MU™ AERO**	**BONDERITE C-IC 2310™ AERO**	**BONDERITE C-IC ALDOX® V AERO**	**BONDERITE C-IC SMUT-GO® NC AERO**
	Known as	Turco® Deoxidizer 6 Makeup	Turco® Deoxalume® 2310™	Turco® Aldox® V	Turco® Liquid SMUT-GO® NC
Regional Availability & Packaging	Asia Pacific	Drum, Pail	–	–	Drum
	Europe / Middle East / Africa	–	Pail	–	Pail, Drum, Tote
	Latin America	Drum, Pail	Drum	–	Drum
	North America	Bottle, Bulk, Drum, Tote	Bulk, Drum, Tote	Bottle, Drum, Tote	Bottle, Drum
Description		**BONDERITE C-IC DEOXDZR 6MU™ AERO** in a solution of nitric acid or sulfuric acid removes oxides and alkali residues of preceding alkaline degreasing or etching processes on aluminium and its alloys. It is used in an immersion process.	**BONDERITE C-IC 2310™ AERO** is a chromium-free concentrated acidic liquid product specifically formulated for deoxidizing and desmutting wrought aluminum alloys. It is extremely effective in removing surface oxides, discolorations due to heat treatment or thermal deburring, and smut which develops during alkaline etching and chemical milling. It develops a stain-free surface on aluminum alloys and is used prior to finishing operations such as anodizing, chemical milling, penetrant dye inspection and spot or resistance welding.	**BONDERITE C-IC ALDOX® V AERO** is a chromium-free, brown liquid formulated to deoxidize, desmut, and lightly etch aluminum alloys. It can be applied as spray or immersion methods that require low surface resistance, prior to anodizing, conversion coating, bonding or welding.	**BONDERITE C-IC SMUT-GO® NC AERO** is a dark brown liquid formulated to deoxidize and desmut aluminum alloys by spray or immersion methods. It is chromate-free and ideal for processing alloys that require low surface resistance, prior to anodizing, conversion coating, bonding or welding. The nominal etch rates for most aluminum alloys will normally be in the range of 0.02 – 0.10 mils/surface/hour.

Notes

	•	
		•
	•	
		•
	Liquid	Liquid
	Concentrated, One Package	Concentrated
	Non-Chrome, Iron-Based	Strong Acid
	1 – 15 Minutes	–
	Ambient	Ambient – 140°F Ambient – 60°C
	19% v / v	–
	15 – 60 Seconds	–
	Ambient	–
	19m% v / v	–
	BONDERITE C-IC SMUT-GO® NCB AERO	**BONDERITE C-IC 4104™ AERO**
	Turco® Liquid SMUT-GO® NCB	Turco® Nitradd (T-4104)
	Drum, Pail	Drum, Pail
	Drum, Pail, Tote	Pail
	Drum	–
	Bottle, Drum	Drum, Pail
	BONDERITE C-IC SMUT-GO® NCB AERO is a dark brown liquid formulated to deoxidize and desmut aluminum alloys by spray or immersion methods. It is chromate-free and ideal for processing alloys that require low surface resistance, prior to anodizing, conversion coating, bonding or welding. Nominal etch rates for most aluminum alloys will be in the range of 0.1 to 0.9 mils/surface/hour. If lower etch rates are required, BONDERITE C-IC SMUT-GO® NC AERO may be used.	**BONDERITE C-IC 4104™ AERO** is a clear, colorless liquid acidic compound designed to be added to nitric acid / water solutions to enhance the descaling and pickling of stainless steels and heat resistant alloys, including titanium alloys, by immersion methods. It is also effective in descaling or pickling cobalt, chrome, nickel and copper based alloys.

The foundation of every successful surface treatment:

BONDERITE conversion coatings

First step: surface protection

Whenever a high bare corrosion protection is necessary, an anodization is not possible or a repair coating for small areas is required, you will need a reliable surface treatment before bonding and painting: A protective surface layer created by a chemical reaction between the metal and a chemical solution.

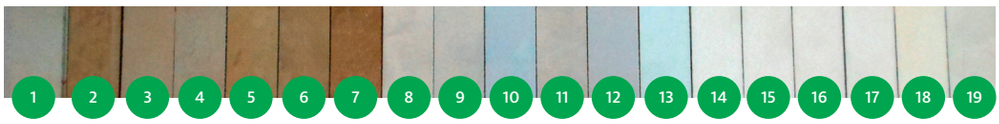
First choice: BONDERITE conversion coatings

Once the conversion coating has been applied as fundamental surface layer, there is no chance to replace it – reason enough to choose high-performance coatings only. With BONDERITE, Henkel offers multiple options in conversion and chemical coatings for all your metal pretreatment processes and for more applications than any other chemical provider. This high-end quality is the reason why our different types of proven BONDERITE conversion coatings are listed in many OEM process specifications.

Why choose BONDERITE conversion coatings?

- Stabilize metal surface
- Protect metal surface from corrosion
- Inhibit corrosion spread
- Improve paint adhesion and adhesive bonding

Non-chrome Hexachrome Trichrome



1 – 7	Hexachrome	11 – 13	Non-chrome	18	Anodizing surface
8 – 10	Trichrome	14 – 17	Adhesion promoter	19	FPL

BONDERITE conversion coatings:
Facts at a glance

Where BONDERITE conversion coatings are used

- For the corrosion protection of aluminum surfaces
- For metal pretreatment before bonding and painting
- For high bare corrosion protection
- Substituting anodization by inappropriate shape of substrates
- As repair coating for small areas
- For critical military applications according to MIL-DTL-81706B

BONDERITE conversion coatings capabilities

- Stabilize metal surfaces before and after painting
- Inhibit corrosion spread
- Optimize paint adhesion
- Improve adhesives bonding
- Maintain electrical resistance
- May insulate one metal from another

Available chemistries:

- Hexavalent chrome (Cr^{6+})
- Trivalent chrome (Cr^{3+})
- Non-chrome
- Adhesion promoters

Qualified Products List for MIL-DTL-81706B*

TYPE 1 Composition with Cr^{6+}	Known as	Class		Material Form						Application Method			
		1A	3	1 Form I Concen-trated Liquid	2 Form II Powder	3 Form III Premix Liquid	4 Form III Premix Liquid	5 Form V Premea-sured Powder	6 Form VI Premixed Liquid	A Spray	B Brush	C Immer-sion	D Appli-cator
BONDERITE M-CR 1001™ AERO	Alodine® 1001™		•	•						•		•	
BONDERITE M-CR 1132™ AERO	Alodine® 1132™ Touch-N-Prep® Pen	•	•						•				•
BONDERITE M-CR 1200™	Alodine® 1200™	•			•					•	•	•	
BONDERITE M-CR 1200™	Alodine® 1200™		•		•							•	
BONDERITE M-CR 1200S™ AERO	Alodine® 1200S™	•			•					•	•	•	
BONDERITE M-CR 1200S™ AERO	Alodine® 1200S™		•		•							•	
BONDERITE M-CR 1201™ AERO	Alodine® 1201™ (Brush On)	•				•					•		
BONDERITE M-CR 1500™ AERO	Alodine® 1500™		•	•						•		•	
BONDERITE M-CR 1600™ AERO	Alodine® 1600™	•	•	•								•	
BONDERITE M-CR 600™ AERO	Alodine® 600™	•	•		•					•	•	•	
BONDERITE M-CR 600™ RTU AERO	Alodine® 600™ RTU	•	•			•				•	•	•	
BONDERITE M-CR ACCELAGOLD AERO	Turco® Liquid Accelagold	•				•					•		

TYPE 2 Composition with Cr^{+3}	Known as	Class		Material Form						Application Method			
		1A	3	1 Form I Concen-trated Liquid	2 Form II Powder	3 Form III Premix Liquid	4 Form III Premix Liquid	5 Form V Premea-sured Powder	6 Form VI Premixed Liquid	A Spray	B Brush	C Immer-sion	D Appli-cator
BONDERITE M-CR T 5900® AERO	Alodine® T 5900®	•	•	•						•	•	•	
BONDERITE M-CR T5900™ RTU AERO	Alodine® T 5900® RTU	•	•			•				•	•	•	
BONDERITE M-CR 871™ AERO	Alodine® 871™ Touch-N-Prep® Pen	•	•						•				•

BONDERITE, known as ALODINE®, conversion coating products per MIL-DTL-81706B, are actively managed by Henkel Aerospace Products and Services with NAVAIR. As required by NAVAIR, Henkel maintains rigorous formulation and manufacturing site control, as well as quality control batch release testing for these MIL-SPEC products. To extend the Henkel warranty and certification, customers are instructed to procure these products from authorized manufacturing sites and from Henkel authorized aerospace distributors. The customers are liable for compliance with its process requirements.
For more information on Henkel products and approval sites per MIL-DTL-81706B, visit: **www.henkel-adhesives.com/aerospace-quality** and **www.henkel-adhesives.com/aerospace-distributor**.

Metal Pretreatment: Conversion Coatings

Applications	Chrome 6 (MIL-SPEC)	•	•	•	•
	Chrome 3				
	Non-Chrome				
	Adhesion Promoter				
Substrate	Aluminum	•	•	•	•
	Magnesium				
	Magnesium – Die Cast				
	Titanium				
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Powder
	Form	Concentrated	Ready-to-Use	Concentrated	Concentrated
	Chemistry	Chromate	Chromate	Chromate	Chromate
Process (Immersion)	Time (Minutes)	2 – 5 Minutes	1 – 3 Minutes	2 – 5 Minutes	15 Seconds – 3 Minutes
	Temperature °F / °C	70 – 160°F 21 – 71°C	Ambient	Ambient	70 – 100°F 21 – 38°C
	Mix Ratio (Product : Water)	15 % by Volume	Used as Received	25%	6.3 lbs. / 100 gals. 7.55 g / L
Process (Spray)	Time (Minutes)	15 – 30 Seconds	1 – 3 Minutes	2 – 5 Minutes	15 Seconds – 1 Minute
	Temperature °F / °C	70 – 160°F 21 – 71°C	Ambient	Ambient	70 – 100°F 21 – 38°C
	Mix Ratio (Product : Water)	15% by Volume	Used as Received	25%	6.3 lbs. / 100 gals. 7.55 g / L
Products	New Product Name	**BONDERITE M-CR 1000L™ AERO**	**BONDERITE M-CR 1000RTU™ AERO**	**BONDERITE M-CR 1001™ AERO**	**BONDERITE M-CR 1200S™ AERO**
	Known as	Alodine® 1000™ Liquid	Alodine® 1000™ RTU	Alodine® 1001™	Alodine® 1200S™
Regional Availability & Packaging	Asia Pacific	Pail	–	Pail	Pail
	Europe / Middle East / Africa	–	–	–	Pail
	Latin America	Pail	Pail	Case	Pail
	North America	Drum, Pail	Bottle, Drum, Pail	Case, Drum	Bulk, Can, Drum
Description		**BONDERITE M-CR 1000L™ AERO** is a liquid chemical used to produce a protective coating on aluminum and its alloys. The coating provides protection for aluminum and excellent bond for organic coatings. It should be used when the characteristic aluminum appearance or finish is retained.	**BONDERITE M-CR 1000RTU™ AERO** is a ready-to-use aqueous solution for producing a protective coating on aluminum and its alloys. Its light coatings do not significantly change the appearance of the aluminum surface. The coating provides excellent protection for painted and unpainted aluminum and bonds paint well. It is specifically designed for touching up abraded or damaged areas on work previously treated with conversion coating chemicals.	**BONDERITE M-CR 1001™ AERO** is a nonflammable, chromic, acid-based coating chemical that produces a chrome conversion coating on aluminum and its alloys. This chrome conversion coating offers the best affordable substrate for both paint adhesion and corrosion resistance.	**BONDERITE M-CR 1200S™ AERO** is a powdered chemical used to produce a protective coating on aluminum to minimize corrosion and provide an improved bond for paint.

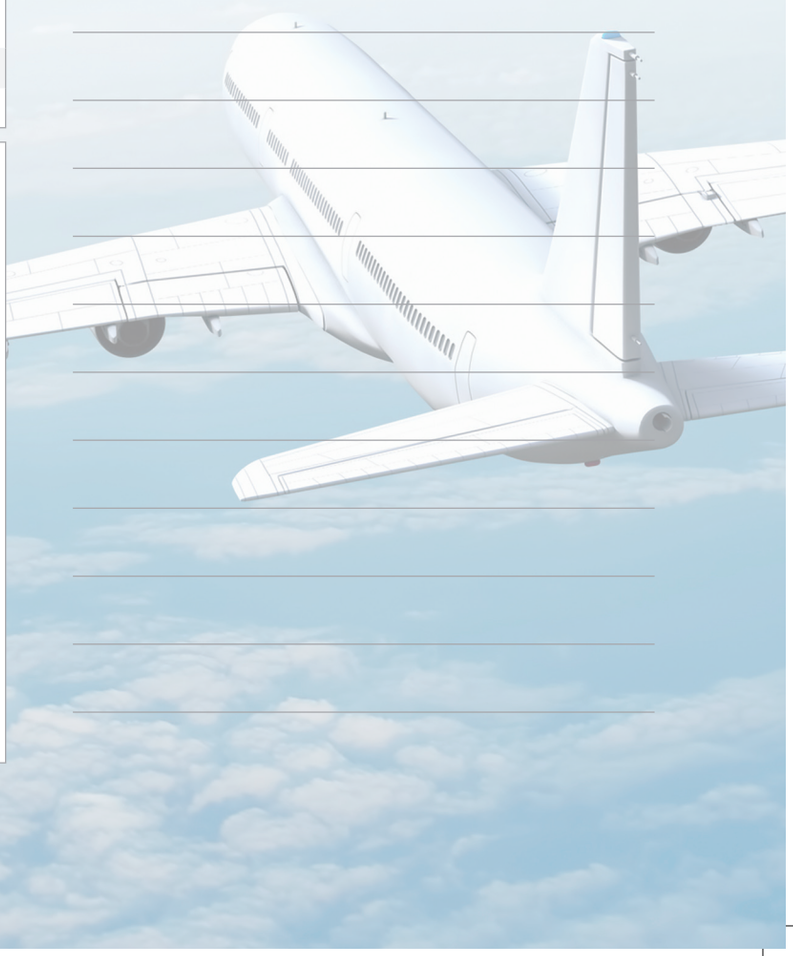
•	•	•	•	•	•
•	•	•	•	•	•
Liquid	Powder	Liquid	Powder	Liquid	Liquid
Concentrated, Two Packages	Concentrated	Ready-to-Use	Concentrated	Ready-to-Use	Ready-to-Use
Chromate	Chromate	Chromate	Chromate	Chromate	Chromate
1 – 5 Minutes	1 – 5 Minutes	–	15 Seconds – 3 Minutes	2 – 5 Minutes	Until Dry
60 – 130°F 16 – 54°C	70 – 100°F 21 – 38°C	–	70 – 100°F 21 – 38°C	Ambient – 100°F Ambient – 38°C	Ambient
0.65% v / v 1.3% v / v	12.5 lbs. / 100 gals. 15 g / L	–	6.3 lbs. / 100 gals. 7.55 g / L	33% by Volume	Used as Received
1 – 5 Minutes	1 – 3 Minutes	1 – 5 Minutes	15 Seconds – 1 Minute	2 – 5 Minutes	–
60 – 130°F 16 – 54°C	70 – 100°F 21 – 38°C	70 – 100°F 21 – 38°C	70 – 100°F 21 – 38°C	Ambient – 100°F Ambient – 38°C	–
0.65% v / v 1.3% v / v	12.5 lbs. / 100 gals. 15 g / L	Used as Received	6.3 lbs. / 100 gals. 7.55 g / L	50% – 100% v / v	–
BONDERITE M-CR 1600™ AERO	**BONDERITE M-CR 600™ AERO**	**BONDERITE M-CR 600RTU™ AERO**	**BONDERITE M-CR 1200™ AERO**	**BONDERITE M-CR 1201™ AERO**	**BONDERITE M-CR 1132™ AERO**
Alodine® 1600™	Alodine® 600™	Alodine® 600™ RTU	Alodine® 1200™	Alodine® 1201™	Alodine® 1132™ Touch-N-Prep® Coating
–	Pail	Pail	Pail	Pail	Pen
–	Pail	–	Pail	–	Pen
Drum	Pail	Pail	–	Pail	Pen
Bottle, Drum, Pail	Can, Drum, Pail	Bottle, Drum, Pail, Tote	–	Bottle, Case, Drum, Tote	Pen
BONDERITE M-CR 1600™ AERO is a concentrated liquid two-package chemical used to produce a chromate conversion coating on aluminum and all its alloys. The color ranges from light iridescent gold to tan. It does not contain complex cyanides.	**BONDERITE M-CR 600™ AERO** is a powdered chemical used to produce a chromate conversion coating on aluminum and its alloys, which range in color from light, iridescent gold to tan. It can be applied by immersion or spray methods, does not contain complex cyanides, and is particularly recommended where a low dielectric resistance coating is desired.	**BONDERITE M-CR 600RTU™ AERO** is a ready-to-use liquid product which produces a chromate conversion coating on aluminum and its alloys. The coating produced provides excellent protection for unpainted aluminum and bonds paint well.	**BONDERITE M-CR 1200™ AERO** is a powdered chemical used to produce a protective coating on aluminum which ranges in color from light iridescent gold to tan. The process is operated at room temperature. The coating produced minimizes corrosion and provides an improved bond for paint.	**BONDERITE M-CR 1201™ AERO** is a nonflammable, chromic, acid-based coating chemical that produces a chrome conversion coating on aluminum and its alloys.	**BONDERITE M-CR 1132™ AERO** is designed to save labor, material and time when applying a dry-in-place hexachrome conversion coating for touch-up applications. Its proper use also reduces worker contact to chromated solution and decreases wastewater such as rinse water generated from a chromating process.

Metal Pretreatment: Conversion Coatings

Applications	Chrome 6 (MIL-SPEC)	•			
	Chrome 3		•	•	•
	Non-Chrome				
	Adhesion Promoter				
Substrate	Aluminum		•	•	•
	Magnesium	•		•	•
	Magnesium – Die Cast	•		•	•
	Titanium			•	•
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid
	Form	Ready-to-Use, Two-Part Kit	Ready-to-Use	Concentrated	Ready-to-Use
	Chemistry	Chromate	Trivalent Chrome	Trivalent Chrome	Trivalent Chrome
Process (Immersion)	Time (Minutes)	–	–	5 – 10 Minutes	5 – 10 Minutes
	Temperature °F / °C	–	–	75 – 110°F 24 – 42°C	70 – 100°F 21 – 38°C
	Mix Ratio (Product : Water)	–	–	3 – 10% by Volume	Used as Received
Process (Spray)	Time (Minutes)	Until Dry	–	1.5 – 3 Minutes	1.5 – 3 Minutes
	Temperature °F / °C	Ambient	–	75 – 110°F 24 – 42°C	70 – 100°F 21 – 38°C
	Mix Ratio (Product : Water)	Used as Received	–	3 – 10% by Volume	Used as Received
Products	New Product Name	**BONDERITE M-CR MAGNESIUM AERO**	**BONDERITE M-CR 871™ AERO**	**BONDERITE M-CR T5900™ AERO**	**BONDERITE M-CR T5900™ RTU AERO**
	Known as	Alodine® Magnesium Treatment Kit	Alodine® 871™ Touch-N-Prep® Coating	Alodine® T 5900®	Alodine® T 5900® RTU
Regional Availability & Packaging	Asia Pacific	Kit	Pen	–	–
	Europe / Middle East / Africa	–	Pen	–	–
	Latin America	–	–	–	–
	North America	Kit, Drum	Pen	Bottle, Drum, Pail	Drum, Pail, Tote
Description		**BONDERITE M-CR MAGNESIUM AERO** contains products formulated for treating magnesium alloys to produce a chromate conversion coating conforming to SAE AMS-M-3171, Type VI. The application method conforms to requirements in NAVAIR 01-1A-509 and is meant primarily for touch-up and corrosion repair processes of magnesium alloys.	**BONDERITE M-CR 871™ AERO** is a trichrome dry-in-place conversion coating designed for use on aluminum and its alloys. The applicator used to deliver this product provides an easy and safe method of repairing bare areas of aluminum surfaces. Its proper use reduces worker contact to chemical solutions and decreases wastewater such as rinse water generated from a conversion coating process.	**BONDERITE M-CR T5900™ AERO** treatment develops a complex trivalent chromium conversion coating on aluminum and its alloys, metals coated with IVD aluminum, magnesium, titanium and zinc surfaces. The process provides bare ASTM-B117 salt spray resistance and serves as an excellent base for bonding of paints and adhesives.	**BONDERITE M-CR T5900™ RTU AERO** treatment is a complex trivalent chromium conversion coating formulated for treating aluminum and its alloys, metals coated with IVD aluminum, magnesium, titanium and zinc surfaces. This product is formulated as a ready-to-use material for manual spray applications.

Notes

•	•	
		•
•	•	•
•	•	
•	•	•
Liquid	Liquid	Liquid
Concentrated	Ready-to-Use	Ready-to-Use
Acid	Acid	Non-chrome, Organic
30 Seconds – 5 Minutes	–	–
Ambient	–	–
1 – 8%	–	–
30 Seconds – 5 Minutes	1 – 5 Minutes	Dry-in-Place
Ambient	Ambient	Ambient
1 – 8%	Used as Received	Used as Received
BONDERITE M-NT 5200™ AERO	**BONDERITE M-NT 5700™ AERO**	**BONDERITE M-NT 8800™ AERO**
Alodine® 5200™ Makeup	Alodine® 5700™	Alodine® 8800™
–	–	–
–	Pail	–
–	–	–
Bottle, Drum, Pail	Bottle, Case, Drum, Pail	Pail
BONDERITE M-NT 5200™ AERO treatment is a chromium-free product and specifically formulated for treating aluminum and its alloys. It may be used by spray or immersion. The process provides an excellent base for organic finishes.	**BONDERITE M-NT 5700™ AERO** treatment is a chromium-free conversion coating specifically formulated for treating aluminum and its alloys. This product is formulated as a ready-to-use material for spray applications. The process provides an excellent base for organic finishes.	**BONDERITE M-NT 8800™ AERO** is a sol-gel coating replacement specifically formulated for increasing adhesion to aluminum and titanium alloys. This product is suitable for spray, brush, and wipe-on applications. The coating produced provides an excellent base for organic finishes and surface preparation for adhesive bonding. It should not be rinsed after application.



For professional protection of parts:

BONDERITE maskants for chemical milling process

Protect all non-etched areas ...

Masking is the process of applying a coating to the metal surface to protect areas which will not be etched. Maskants are used to protect or repair edges, surface damage and cover tooling holes.

... but do it the easy way – with BONDERITE maskants

Why are Henkel's solutions the "easy way of masking"? First of all, because they allow many ways of application: by dip, spray, flow-coat or brush. Secondly, they save working hours as air dry copes with many of these applications. And thirdly, they are easy to remove by hand-peeling.

BONDERITE maskants:

Facts at a glance

BONDERITE maskants key features:

- Solvent-borne and 100 percent Solids (2K)
- Fast curing
- No oven drying / curing required
- Time-saving process

Key factors to consider when choosing the right BONDERITE maskant

- Sufficient adhesion resistance
- Chemical resistance

Chemical Milling: Maskants

Applications	Maskants	•	•	•	•	
Substrate	Aluminum	•	•	•	•	
	Composites Material					
	Magnesium	•	•			
	Magnesium – Die Cast					
	Mild Steel	•	•			
	Stainless Steel					
	Titanium	•	•			
	Ferrous			•		
	Nonferrous			•		
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid	
	Form	Ready-to-Use	Ready-to-Use	Ready-to-Use	Two-Part Kit	
	Chemistry	Solvent-Based Coating	Solvent-Based Coating	Solvent-Based Coating	Polyurethane	
Process (Immersion)	Time (Minutes)	–	–	–	–	
	Temperature °F / °C	68 – 86°F 20 – 30°C	–	–	–	
	Mix Ratio (Product : Water)	Use as Received	–	–	–	
Process (Spray)	Time (Minutes)	–	–	–	–	
	Temperature °F / °C	–	Hot Airless Spray: 158 – 176°F 70 – 80°C	Hot Airless Spray: 158 – 176°F 70 – 80°C	–	
	Mix Ratio (Product : Water)	–	Use as Received	Use as Received	1:1	
Products	New Product Name	**BONDERITE S-MA 522™ AERO**	**BONDERITE S-MA 551™ LA-2 AERO**	**BONDERITE S-MA 5580™ G AERO**	**BONDERITE S-MA M-4001™ AERO**	**BONDERITE S-MA M-4002™ AERO**
	Known as	Turco® Mask 522™	Turco® Mask 551™ LA 2	Turco® 5580-G™	Turco® M4001™ (Pol)	Turco® M4002™ (Iso)
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Pail	Drum, Pail	–	–
	Europe / Middle East / Africa	Pail	Drum, Pail, Tote	Drum, Pail	Drum	Drum
	Latin America	–	–	–	–	–
	North America	Drum	–	Drum	–	–
Description		**BONDERITE S-MA 522™ AERO** is a tan, liquid, single component, air-curing product. It provides a peelable protective coating against the corrosive action of hot caustic and acidic solutions used in the chemical milling processing of aluminum, magnesium, steel and titanium alloys.	**BONDERITE S-MA 551™ LA-2 AERO** is a blue, hand-strippable coating formulated to provide protection to metal surfaces during successive fabrication operations such as: chemical milling, forming, chemical cleaning, conversion coating, Type I and Type II anodizing, adhesive bonding and machining.	**BONDERITE S-MA 5580™ G AERO** is a green, hand-strippable coating formulated to provide protection to metal surfaces during successive fabrication operations, such as: forming, chemical cleaning, conversion coating, Type I and Type II anodizing, adhesive bonding and machining.	**BONDERITE S-MA M-4001™ / M-4002™ AERO** is a 100 percent solid, two-component, polyurethane-based, self curing, hand-peelable coating that provides protection of metallic surfaces during mechanical fabrication and chemical processing. Due to its advanced chemistry, its rapid cure allows the user to process coated parts much faster than with conventional solvent or water-based maskants.	

Aircraft depainting is no small task.

Unless you choose BONDERITE paint removers

How to depaint your aircraft professionally

When performing aircraft corrosion checks and paint modifications, it is important to choose consistent and reliable depaint and repaint systems with industry-leading OEM qualifications.

And how to improve it easily: with BONDERITE

There is a way to make the complex as easy as possible: Henkel's BONDERITE depaint technologies are NESHAP compliant, thixotropic products – solvent, hydrogen peroxide and water-based. They are easy to apply as they cling to vertical surfaces. Furthermore, they eliminate the surface contamination of mechanical removal methods.

Why choose BONDERITE paint strippers?

- Reduction of material used, waste generated and overall costs
- Reduction of total paint stripping time
- Low to no odor, improved operator conditions
- Meets leading OEM process specifications

BONDERITE paint stripper:

Facts at a glance

Key factors to consider when choosing the right BONDERITE paint stripper

- OEM process specification requirements
- Metal surface
- Stripping time
- Environmental concerns and regulations

Applications

Henkel offers a complete portfolio of solvent, hydrogen peroxide and water-based products for aircraft depaint and repaint for the following applications:

- Airframe structure
- Hard to reach flap and wheel well areas
- Landing gear and major component repair applications

Types of paint strippers

1. Regulated – Methylene Chloride:

- Fastest stripping times
- Safe on a majority of substrates

2. Environmentally Advantaged – Peroxide:

- Medium stripping times
- Can be used on a majority of substrates

3 Environmentally Advantaged – Acid Activated:

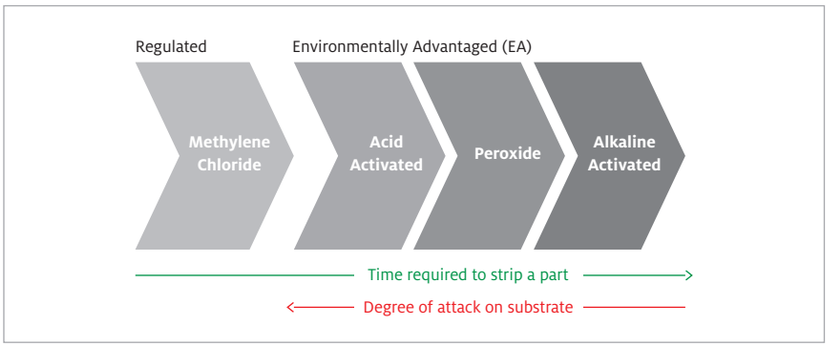
- Faster stripping times
- Can be used on a majority of substrates

4. Environmentally Advantaged – Alkaline Activated:

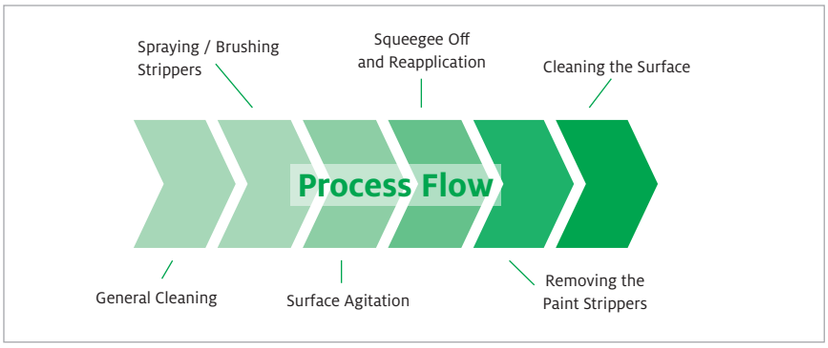
- Slower stripping times
- Safe on a majority of substrates

Objective of Surface Preparation – Aircraft prior to paint

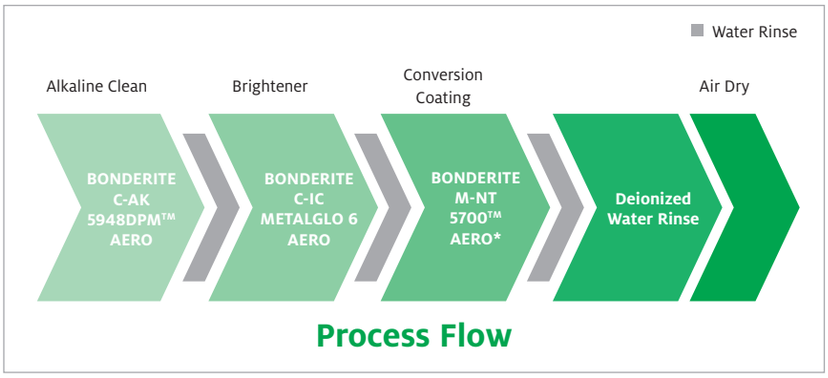
- Produce a properly prepared surface – clean, residue-free
- Ready to accept primer
- Corrosion-free
- Properly conversion coated



Effectiveness of paint stripper types



Depaint – Paint stripping process



Repaint – Metal pretreatment for spray application

* Non-chrome, Hexachrome, Trichrome

Depaint: Cleaners

Applications	Applications	•	•	•
Substrate	Aluminum	•	•	•
	Composites Material			
	Magnesium	•		•
	Mild Steel			
	Stainless Steel	•	•	•
	Titanium	•	•	•
	Ferrous	•	•	•
	Nonferrous	•	•	•
Product Characteristics	Consistency	Liquid	Liquid	Liquid
	Form	Concentrated	Concentrated	Concentrated
	Chemistry	Alkaline, Water-Based	Alkaline, Water-Based	Alkaline, Water-Based
Process (Immersion)	Time (Minutes)	5 – 15 Minutes	–	5 – 15 Minutes
	Temperature °F / °C	130 – 170°F 65 – 80°C	–	130 – 170°F 65 – 80°C
	Mix Ratio (Product : Water)	3% – 20% by value	–	3% – 20% by value
Process (Spray)	Time (Minutes)	Varies as Needed	5 – 15 Minutes	Varies as Needed
	Temperature °F / °C	Ambient	Ambient	Ambient
	Mix Ratio (Product : Water)	1 part concentrate to 9 – 30 parts water	Use as Received	3% – 30% in water
Products	New Product Name	**BONDERITE C-AK 5948DPM™ AERO**	**BONDERITE C-AK 5948DPM™ THK AERO**	**BONDERITE C-AK 5948R™ AERO**
	Known as	Turco® 5948-DPM™	Turco® 5948-DPM™ Thick	Turco® 5948-R™
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Pail	Drum, Pail
	Europe / Middle East / Africa	Drum, Pail, Tote	Pail	Drum, Pail
	Latin America	Drum, Tote	Drum	Drum Pail
	North America	Bottle Drum, Pail	Bottle, Drum, Pail	Bottle, Bulk, Drum, Pail
Description		**BONDERITE C-AK 5948DPM™ AERO** is an alkaline, water-based, blue concentrated compound formulated to effectively clean painted and unpainted aircraft exterior and interior surfaces when diluted with water. It is ideally suited for use on all models of jet aircraft and also designed to be used in immersion tanks for dip applications.	**BONDERITE C-AK 5948DPM™ THK AERO** is an environmentally advantaged, thixotropic, water-based, heavy-duty aircraft cleaner. It is formulated to effectively cling to painted and unpainted aircraft exterior and interior surfaces. It is ideally suited for use on all jets, especially in baggage bins, flap and wheel well areas, and on engines before overhaul. It can be applied as spray or mop.	**BONDERITE C-AK 5948R™ AERO** is an alkaline, water-based, blue, concentrated compound formulated to effectively clean painted and unpainted aircraft exterior and interior surfaces when diluted with water. It is ideally suited for use on all large or small aircraft, and for cleaning engine parts during engine overhaul. It is also designed to be used in immersion tanks for dip applications.

Depaint: Paint Strippers

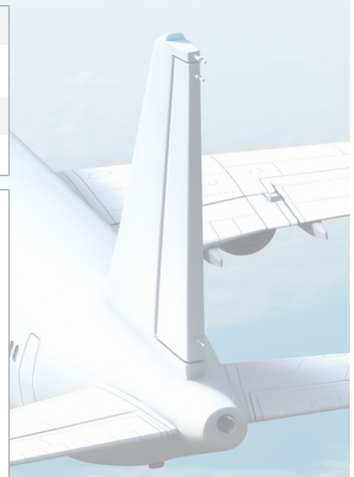
Applications	MeCl	•			
	Acid		•		
	Peroxide			•	•
	Alkaline				
Substrate	Aluminum	•	•	•	•
	Composites Material				
	Magnesium	•			
	Magnesium – Die Cast				
	Mild Steel				
	Stainless Steel	•	•	•	•
	Titanium	•	•	•	•
	Ferrous	•	•	•	•
	Nonferrous	•		•	•
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid
	Form	Ready-to-Use	Ready-to-Use	Ready-to-Use	Ready-to-Use
	Chemistry	Neutral, Methylene Chloride-Based	Acidic	Peroxide-Activated, Water-Based	Peroxide-Activated, Water-Based
Process (Spray)	Time (Minutes)	Varies as Needed	Varies as Needed	Varies as Needed	Varies as Needed
	Temperature °F / °C	Ambient	Ambient	Ambient	Ambient
	Mix Ratio (Product : Water)	Use as Received	Use as Received	Use as Received	Use as Received
Products	New Product Name	**BONDERITE S-ST 5351™ THIN AERO**	**BONDERITE S-ST 6776™ LO AERO**	**BONDERITE S-ST 6881™ AERO**	**BONDERITE S-ST 6930™ AERO**
	Known as	Turco® 5351™ Thin	Turco® 6776-LO	Turco® 6881™	Turco® EA Stripper 6930™
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Drum, Pail, Tote	–	Drum, Pail
	Europe / Middle East / Africa	Pail	Drum, Pail	Box, Drum, Pail	Drum, Pail
	Latin America	Drum, Pail	Drum	–	Drum
	North America	Drum, Pail	Bottle, Drum, Pail	Drum, Pail	Drum, Pail
Description		**BONDERITE S-ST 5351™ THIN AERO** is an amber, diphase liquid developed to remove epoxy, polyurethane and other catalyzed finishes from ferrous and non-ferrous surfaces. It does not contain free acidic or alkaline constituents and is approved for use on high strength steels. It should not be used on materials that are affected by chlorinated hydrocarbons.	**BONDERITE S-ST 6776™ LO AERO** environmentally advantaged paint remover is low-odor, thixotropic, developed for effective stripping of resistant finishes such as epoxies, epoxy primers, polyurethanes and similar catalyzed paints. It offers a significant advance in workplace safety. It does not contain methylene chloride, chlorinated solvents, phenols, chromates, ammonia or amines.	**BONDERITE S-ST 6881™ AERO** environmentally advantaged paint remover is low odor, thixotropic, activated by hydrogen peroxide. It was developed for effective stripping of resistant finishes such as epoxies, epoxy primers, polyurethanes, and similar catalyzed aircraft paints. It offers a significant advance in paint stripper technology. It complies fully with NESHAP. It is not recommended for use on magnesium. It meets the corrosivity requirements of TT-R-2918 except magnesium and cadmium.	**BONDERITE S-ST 6930™ AERO** environmentally advantaged paint remover is low odor, thixotropic, activated by hydrogen peroxide. It was developed for effective stripping of such resistant finishes as epoxies, epoxy primers, polyurethanes, and similar catalyzed aircraft paints. It offers a significant advance in paint stripper technology. It complies fully with NESHAP. It meets the corrosivity requirements of TT-R 2918A. It is not recommended for use on magnesium.

Depaint: Paint Strippers

Applications	MeCl			
	Acid			
	Peroxide			
	Alkaline	•	•	•
Substrate	Aluminum	•	•	•
	Composites Material	•	•	
	Magnesium			•
	Magnesium – Die Cast			
	Mild Steel			
	Stainless Steel			•
	Titanium			•
	Ferrous			•
	Nonferrous			•
Product Characteristics	Consistency	Liquid	Liquid	Liquid
	Form	Ready-to-Use	Ready-to-Use	Ready-to-Use
	Chemistry	Alkaline	Alkaline	Alkaline, Water-Based
Process (Spray)	Time (Minutes)	Varies as Needed	Varies as Needed	Varies as Needed
	Temperature °F / °C	Ambient	Ambient	Ambient
	Mix Ratio (Product : Water)	Use as Received	Use as Received	Use as Received
Products	New Product Name	**BONDERITE S-ST 1270-5™ AERO**	**BONDERITE S-ST 1270-6™ AERO**	**BONDERITE S-ST 6813E™ AERO**
	Known as	Turco® 1270-5™	Turco® 1270-6™	Turco® 6813E™
Regional Availability & Packaging	Asia Pacific	Pail	Pail	Drum, Pail
	Europe / Middle East / Africa	Drum, Pail	–	Pail
	Latin America	–	–	Drum, Pail
	North America	–	Bottle, Drum, Pail	Drum, Pail
Description		**BONDERITE S-ST 1270-5™ AERO** is a viscous white emulsion that does not contain any of the hazardous or highly toxic components of conventional paint removers. It is free of aromatic hydrocarbons, chlorinated solvents, phenol and chromates. It is particularly effective in selective removal of topcoats from painted composites.	**BONDERITE S-ST 1270-6™ AERO** is a viscous white emulsion that does not contain any of the hazardous or highly toxic components of conventional paint removers. It is free of aromatic hydrocarbons, chlorinated solvents, phenol and chromates. It is particularly effective in selective removal or topcoats from painted composites.	**BONDERITE S-ST 6813E™ AERO** water-based, environmentally advantaged paint remover is a viscous, pink liquid formulated to remove multiple coats of aircraft paints such as epoxies, polyurethanes and resistant primers. It clings to vertical as well as overhead surfaces and can be used on aluminum, magnesium, cadmium plated steels and other ferrous metals. It can be applied as spray or brush.

Repaint: Brighteners

Applications	Fluoride	•		
	Non-Fluoride		•	•
Substrate	Aluminum	•	•	•
	Composites Material			
	Magnesium			
	Mild Steel			
	Stainless Steel			
	Titanium			
	Ferrous			
	Nonferrous			
Product Characteristics	Consistency	Liquid	Liquid	Liquid
	Form	Concentrated	Concentrated	Concentrated
	Chemistry	Acid, Solvent	Acid, Solvent	Acid, Solvent
Process (Immersion)	Time (Minutes)	–	–	–
	Temperature °F / °C	–	–	–
	Mix Ratio (Product : Water)	–	–	–
Process (Spray)	Time (Minutes)	Varies as Needed	–	–
	Temperature °F / °C	Ambient – 120°F Ambient – 49°C	–	–
	Mix Ratio (Product : Water)	Full strength or 1:1	Full strength or 1:2	Full strength or 1:2
Products	New Product Name	**BONDERITE C-IC METALGLO 6 AERO**	**BONDERITE C-IC METALGLO FF RTU AERO**	**BONDERITE C-IC METALGLO FF AERO**
	Known as	Turco® Metal Glo #6	Turco® Metal Glo FF RTU	Turco® Metal Glo FF (Concentrate)
Regional Availability & Packaging	Asia Pacific	Pail	–	–
	Europe / Middle East / Africa	Pail	–	–
	Latin America	Drum	–	–
	North America	Bottle, Drum	Drum, Tote	Bottle, Bulk
Description		**BONDERITE C-IC METALGLO 6 AERO** is a nonflammable triacid, detergent, solvent-based cleaner, brightener, deoxidizer and prepaint conditioner for aluminum. It is a viscous liquid used for the removal of oxides and corrosion from aircraft and aluminum surfaces. It produces a chemically clean, water-break-free and streak-free surface when used according to directions.	**BONDERITE C-IC METALGLO FF RTU AERO** is a nonflammable, non-fluoride, acid-based cleaner, brightener, deoxidizer and prepaint conditioner for aluminum. It contains viscosity builders that allow for added contact time, enabling this product to remove corrosion products from horizontal and vertical surfaces. It produces a chemically clean, water-break-free and streak-free surface. It can be applied as spray or brush.	**BONDERITE C-IC METALGLO FF AERO** is a nonflammable, non-fluoride, acid-based cleaner, brightener, deoxidizer and prepaint conditioner for aluminum. It contains viscosity builders that allow for added contact time, enabling this product to remove corrosion products from horizontal and vertical surfaces. It produces a chemically clean, water-break-free and streak-free surface. It can be applied as spray or brush.



Repaint: Conversion Coatings

Applications	Chrome 6 (MIL-SPEC)	•	•		
	Chrome 3				
	Non-Chrome			•	•
Substrate	Aluminum	•	•	•	•
	Composites Material				
	Magnesium	•	•	•	•
	Magnesium – Die Cast	•	•		
	Mild Steel				
	Stainless Steel				
	Titanium	•	•	•	•
	Ferrous				
	Nonferrous				
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid
	Form	Concentrated	Ready-to-Use	Concentrated	Ready-to-Use
	Chemistry	Trivalent Chrome	Trivalent Chrome	Acid	Acid
Process (Spray)	Time (Minutes)	1.5 – 3 Minutes	1.5 – 3 Minutes	30 Seconds – 5 Minutes	1 – 5 Minutes
	Temperature (°F / °C)	75 – 110°F 24 – 42°C	70 – 100°F 21 – 38°C	Ambient	Ambient
	Mix Ratio (Product : Water)	3 – 10% by Volume	Used as Received	1 – 8%	Used as Received
Products	New Product Name	**BONDERITE M-CR T5900™ AERO**	**BONDERITE M-CR T5900™ RTU AERO**	**BONDERITE M-NT 5200™ AERO**	**BONDERITE M-NT 5700™ AERO**
	Known as	Alodine® T 5900®	Alodine® T 5900® RTU	Alodine® 5200™ Makeup	Alodine® 5700™
Regional Availability & Packaging	Asia Pacific	–	–	–	–
	Europe / Middle East / Africa	–	–	–	Pail
	Latin America	–	–	–	–
	North America	Bottle, Drum, Pail	Drum, Pail, Tote	Bottle, Drum, Pail	Bottle, Case, Drum, Pail
Description		**BONDERITE M-CR T5900™ AERO** is a complex trivalent chromium conversion coating formulated for treating aluminum and its alloys, metals coated with IVD aluminum, magnesium, titanium and zinc surfaces. This product is formulated as a ready-to-use material for manual spray applications. It provides spray resistance and also serves as an excellent base for organic finishes and adhesives.	**BONDERITE M-CR T5900™ RTU AERO** is a complex trivalent chromium conversion coating formulated for treating aluminum and its alloys, metals coated with IVD aluminum, magnesium, titanium and zinc surfaces. This product is formulated as a ready-to-use material for manual spray applications. It provides spray resistance and also serves as an excellent base for organic finishes and adhesives.	**BONDERITE M-NT 5200™ AERO** is a chromium-free product specifically formulated for treating aluminum and its alloys. It provides an excellent base for bonding of adhesives and organic finishes. It can be applied as spray or immersion.	**BONDERITE M-NT 5700™ AERO** is a chromium-free product specifically formulated for treating aluminum and its alloys. It provides an excellent base for bonding of adhesives and organic finishes. It can be applied as spray or immersion.

Notes

	•

	•

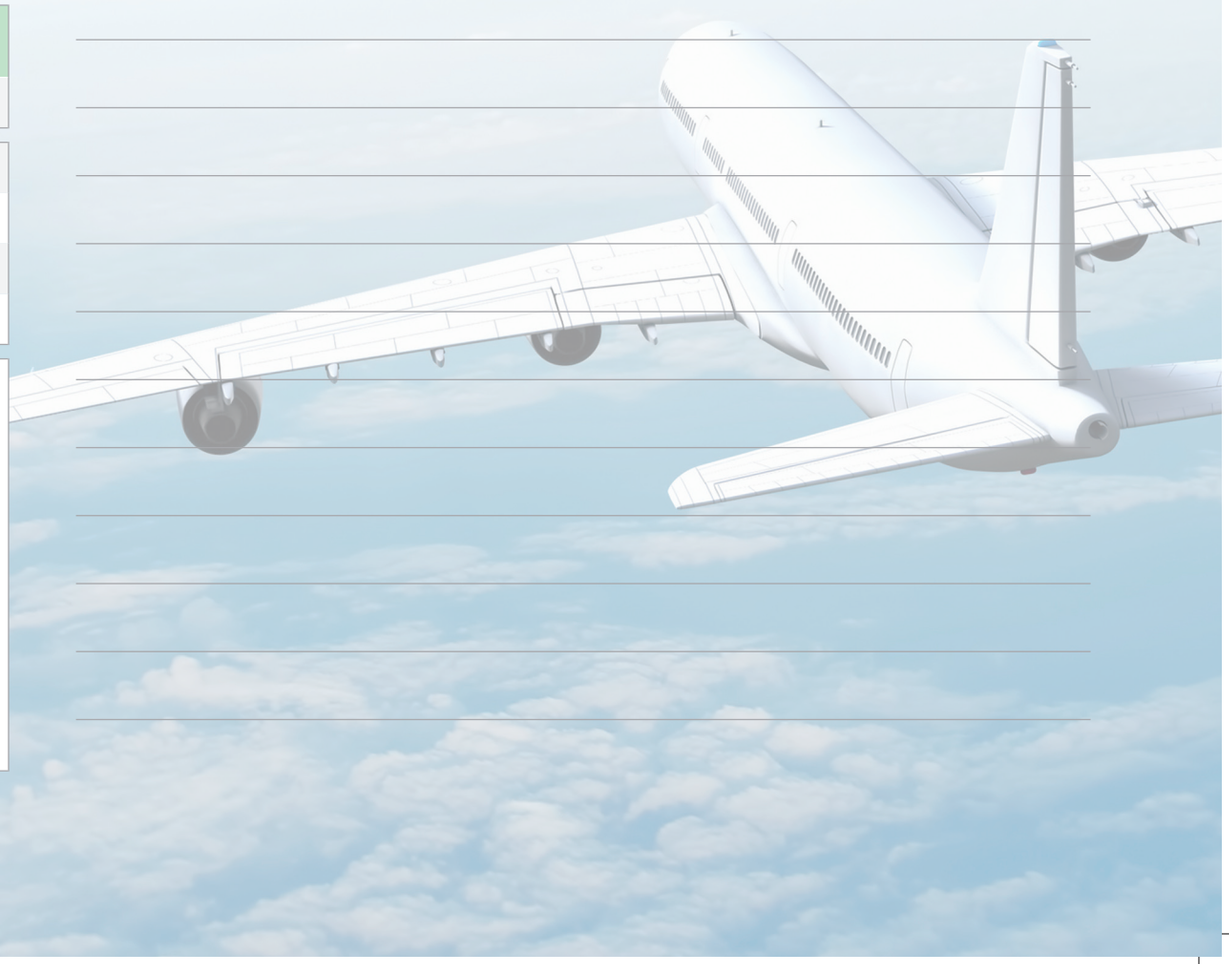
	Liquid
	Ready-to-Use
	Chromate

	1 – 5 Minutes
	70 – 100°F 21 – 38°C
	Used as Received

	BONDERITE M-CR 600RTU™ AERO
	Alodine® 600™ RTU

	Pail
	–
	Pail
	Bottle, Drum, Pail, Tote

	BONDERITE M-CR 600RTU™ AERO is a ready-to-use liquid product which produces a chromate conversion coating on aluminum and its alloys. The coating provides excellent protection for unpainted aluminum and bonds paint well.



Repaint: Conversion Coatings Touch Up

Applications	Chrome 6 (MIL-SPEC)			•	•
	Chrome 3		•		
	Adhesion Promoter	•			
Substrate	Aluminum	•	•	•	
	Composites Material				
	Magnesium				•
	Magnesium – Die Cast				•
	Mild Steel				
	Stainless Steel				
	Titanium	•			
	Ferrous				
	Nonferrous				
Product Characteristics	Consistency	Liquid	Liquid	Liquid	Liquid
	Form	Two-Part Kit	Ready-to-Use	Ready-to-Use	Ready-to-Use
	Chemistry	Non-chrome, Organic	Trivalent Chrome	Chromate	Chromate
Process (Spray)	Time (Minutes)	Dry-in-Place	–	–	Until Dry
	Temperature (°F / °C)	Ambient	–	–	Ambient
	Mix Ratio (Product : Water)	Used as Received	–	–	Used as Received
Products	New Product Name	**BONDERITE M-NT 8800™ AERO**	**BONDERITE M-CR 871™ AERO**	**BONDERITE M-CR 1132™ AERO**	**BONDERITE M-CR MAGNESIUM AERO**
	Known as	Alodine® 8800™	Alodine® 871™ Touch-N-Prep® Coating	Alodine® 1132™ Touch-N-Prep® Coating	Alodine® Magnesium Treatment Kit
Regional Availability & Packaging	Asia Pacific	–	Pen	Pen	Kit
	Europe / Middle East / Africa	–	Pen	Pen	–
	Latin America	–	–	Pen	–
	North America	Pail	Pen	Pen	Kit, Drum
Description		**BONDERITE M-NT 8800™ AERO** is a sol-gel coating replacement specifically formulated for increasing adhesion to aluminum and titanium alloys. This product is suitable for spray, brush, and wipe-on applications. The coating produced provides an excellent base for organic finishes and surface preparation for adhesive bonding. It should not be rinsed after application.	**BONDERITE M-CR 871™ AERO** is a trichrome dry-in-place conversion coating designed for use on aluminum and its alloys. The applicator used to deliver this product provides an easy and safe method of repairing bare areas of aluminum surfaces. Its proper use reduces worker contact to chemical solutions and decreases wastewater such as rinse water generated from a conversion coating process.	**BONDERITE M-CR 1132™ AERO** is designed to save labor, material and time when applying a dry-in place hexachrome conversion coating for touch-up applications. Its proper use also reduces worker contact to chromated solution and decreases wastewater such as rinse water generated from a chromating process.	**BONDERITE M-CR MAGNESIUM AERO** contains products formulated for treating magnesium alloys to produce a chromate conversion coating conforming to SAE AMS-M-3171, Type VI. The application method conforms to requirements in NAVAIR 01-1A-509 and is meant primarily for touch-up and corrosion repair processes of magnesium alloys.

	•

	•

	Liquid
	Ready-to-Use
	Chromate

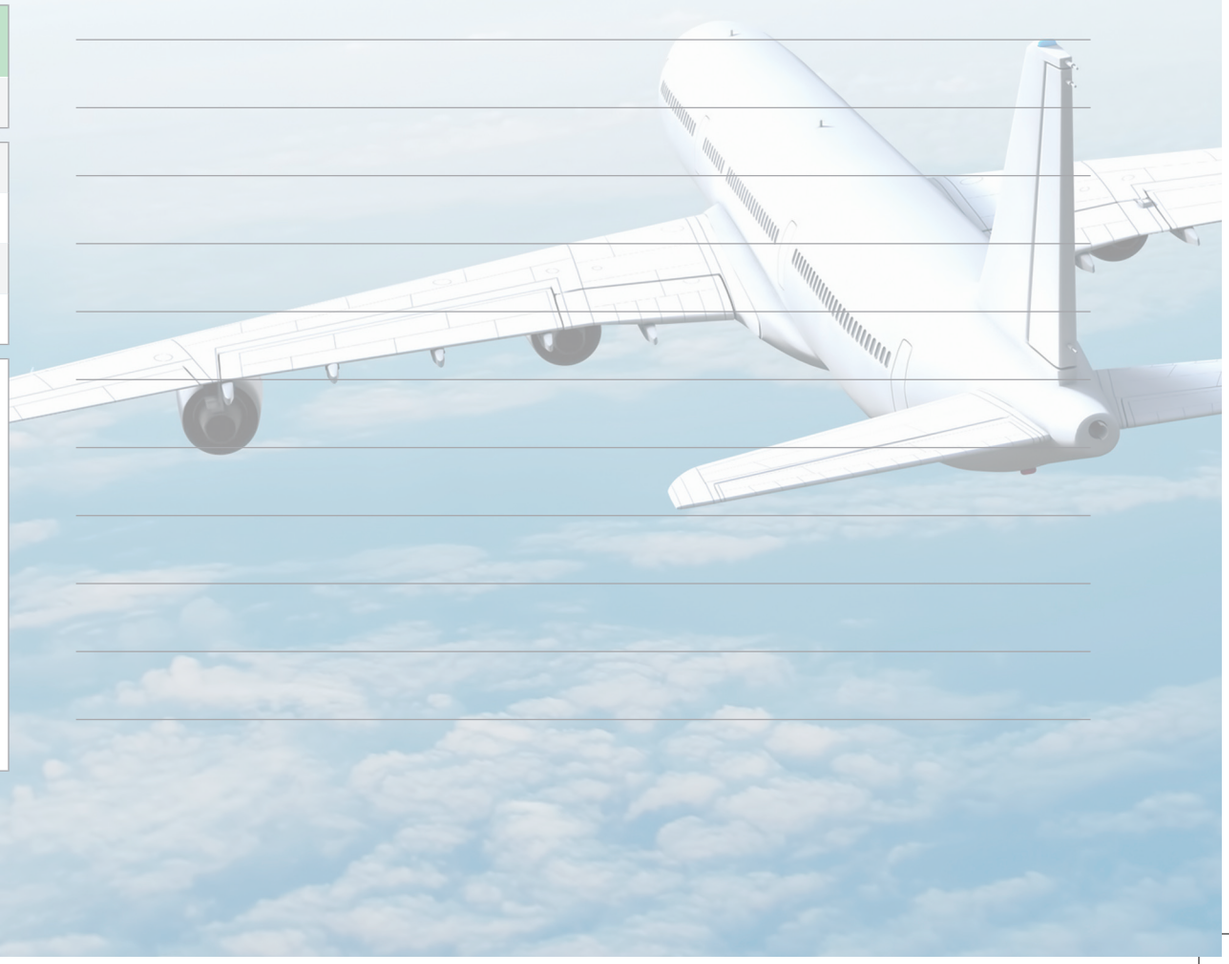
	1 – 5 Minutes
	Ambient
	Used as Received

	BONDERITE M-CR 120™ BRUSH AERO
	Alodine® 120™ Brush Kit

	–
	–
	Kit
	Kit

	BONDERITE M-CR 120™ BRUSH AERO contains the conversion coating BONDERITE M-CR 1201 AERO and the deoxidizer BONDERITE C-IC 605 AERO. These are products formulated for treating aluminum. This kit contains sufficient chemicals for cleaning and coating approximately 100 ft² of aluminum surface when used under normal conditions.

Notes



For proven engine maintenance solutions, trust Henkel's engine overhaul and compressor washer products:

BONDERITE engine cleaners

Engine maintenance: a matter of safety

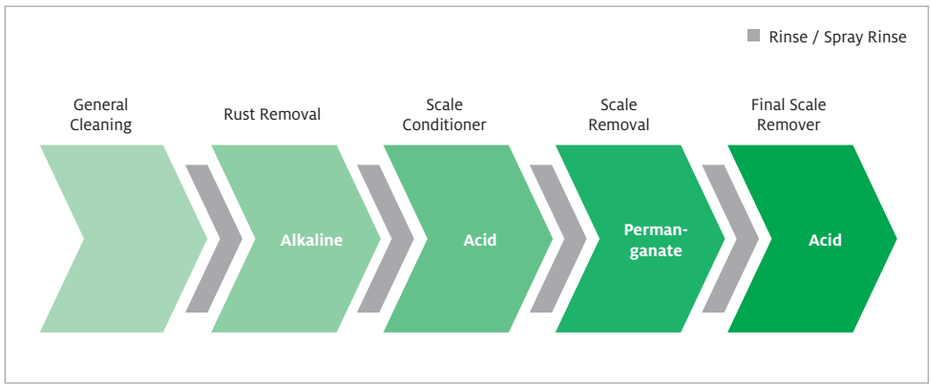
In the interest of safety, many external considerations from regional regulatory agencies to engine OEMs / shop requirements contribute to and determine the appropriate engine maintenance protocol. Engine parts need to be professionally and thoroughly cleaned for effective Non-Destructive Testing (NDT) inspection and corresponding engine overhaul or parts replacement activities.

No compromises: BONDERITE engine cleaners

Providing one of the broadest portfolios in the industry, BONDERITE engine overhaul and compressor washers meet major OEM process specifications while being available globally. Whether you require an on-wing or off-wing solution, BONDERITE removes metal oxide scales, sulfadations and carbonaceous material. BONDERITE is highly cost-effective and provides reliable results – day by day.

Why choose BONDERITE engine cleaners?

- Meet many OEM process requirements
- Cost-effective with excellent rust and contaminant removal properties
- Efficient scale removal properties
- Total engine overhaul package solution



Engine Overhaul Process

BONDERITE engine cleaners:
Facts at a glance

Key factors to consider when choosing the right BONDERITE engine cleaner

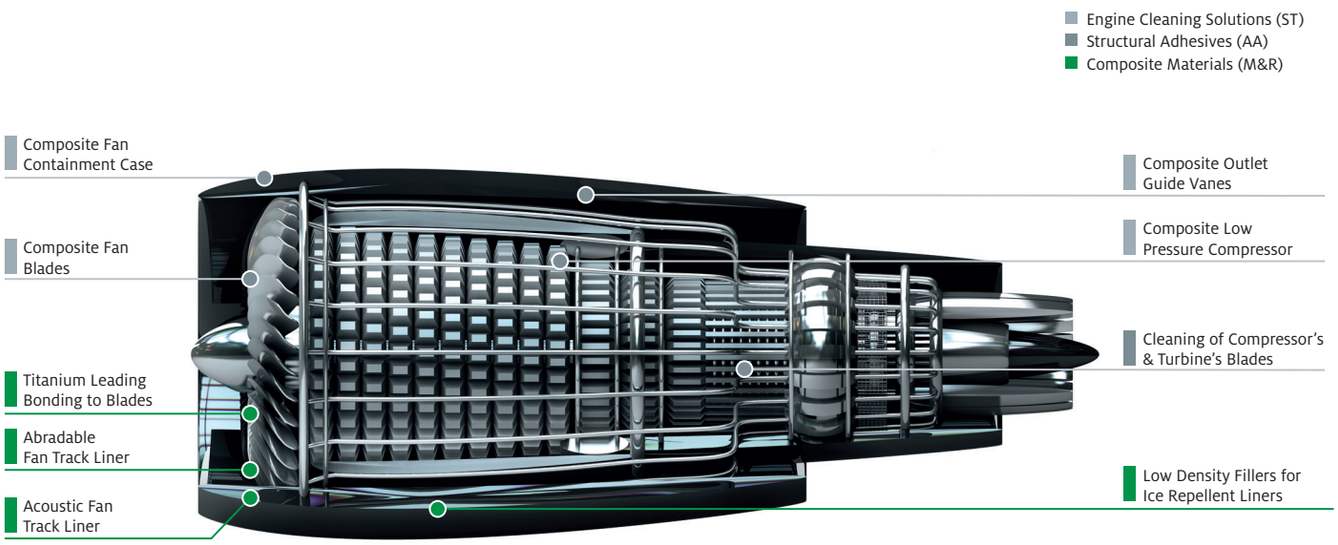
- Meets OEM qualified process requirements
- Metal substrate
- Soil types (organic or inorganic)
- Environmental concerns and regulations
- Disposal system compatibility
- Bath life
- Rinse conditions (procedures, steps, water availability)
- Transfer times
- Special purposes – applications like field repair

Engine cleaning sections

- On-wing cleaning – compressor washers
- Off-wing cleaning – engine overhaul
  - Cold section
  - Hot section

Key factors influencing the cleaning performance

- Product concentration
- Temperature
- Time
- Product agitation
- Metal surface conditions
- Contamination and age of bathing solution
- Rinsing



Engine Maintenance: Engine Overhaul

Applications	Rust Remover	•	•			
	Permanganate			•		
	Scale conditioner				•	
	Rinse Aid					
	Wax Remover					
Substrate	Aluminum					
	Composites Material					
	Magnesium	•	•			
	Magnesium – Die Cast					
	Mild Steel					
	Stainless Steel	•	•		•	
	Titanium	•	•		•	
	Ferrous	•	•	•	•	
	Nonferrous					
Product Characteristics	Consistency	Powder	Liquid	Liquid	Liquid	
	Form	Concentrated	Concentrated	Two-Part Kit	Concentrated	
	Chemistry	Alkaline	Alkaline	Alkaline, Permanganate	Acid-Activated	
Process (Immersion)	Time (Minutes)	15 – 30 Minutes	General: 15 – 60 Minutes Titanium: 15 – 30 Minutes	30 – 60 Minutes	30 Minutes	
	Temperature °F / °C	General: 185 – 205°F 90 – 95°C Titanium: 168°F (max.) 75°C (max.)	General: 176 – 203°F 80 – 95°C Titanium: 158 – 167°F 70 – 75°C	176 – 203°F 80 – 95°C	176 – 194°F 80 – 90°C	
	Mix Ratio (Product : Water)	75 – 100% by volume	General: 50 – 75% in water Titanium: 12 – 15% with water	25 – 35% by volume	20 – 30% by volume in water	
Products	New Product Name	**BONDERITE C-AK 4181™ AERO**	**BONDERITE C-AK 4181™ L AERO**	**BONDERITE C-AK 4338™ L AERO**	**BONDERITE C-IC SCALEGON 5 AERO**	
	Known as	Turco® 4181™	Turco® 4181™ L	Turco® 4338™ L Part 1 / Turco® 4338™ L Part 2	Turco® Scale Gon #5	
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Drum, Pail	Drum, Pail / Drum, Pail	Drum, Pail	
	Europe / Middle East / Africa	Pail	Drum, Pail, Tote	Drum, Pail, Tote / Drum, Pail, Tote	Drum, Pail	
	Latin America	–	–	– / Drum	–	
	North America	–	Bottle, Bulk, Drum	Bottle, Drum / Bottle, Drum	Drum	
Description		**BONDERITE C-AK 4181™ AERO** is a flowing granular-free product formulated to simultaneously strip paint, dissolve rust, and light heat from jet engine parts. It is used during routine maintenance. It removes carbonatious deposits, phosphate coatings and Semetal W as well as light oils and unwanted lubricant residues.	**BONDERITE C-AK 4181™ L AERO** is an amber, liquid compound formulated to remove rust, paints, lube oils, drawing pastes, cutting oils and protective oils from ferrous alloys by immersion methods.	**BONDERITE C-AK 4338™ L AERO** is a liquid alkaline permanganate formulation developed specifically for jet engine cleaning. It modifies high temperature heat scale by chemically changing the structure of the oxide deposit to one that is properly conditioned for ease of chemical removal in subsequent processing steps.	**BONDERITE C-IC SCALEGON 5 AERO** is an acid activated yellow liquid used in the BONDERITE Jet Engine Process to condition and remove high temperature scale from jet engine parts.	

Notes

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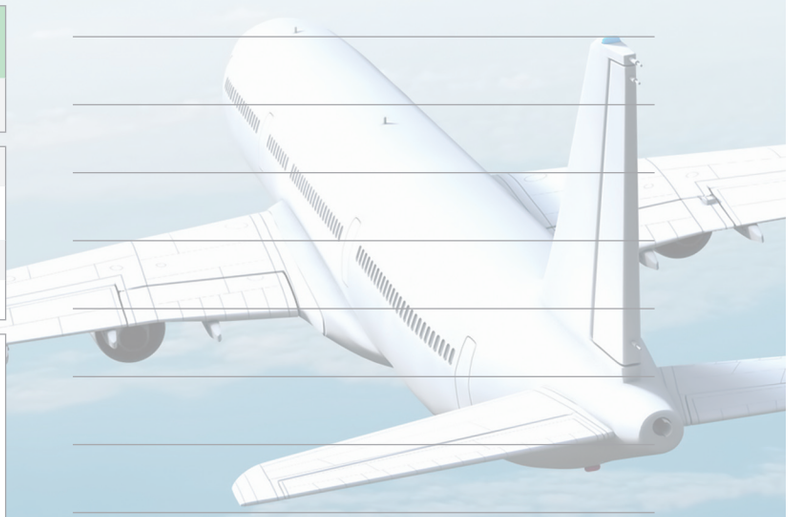
	•	
•		
•		
•		•
		•
Liquid	Liquid	Liquid
Concentrated	Concentrated	Ready-to-Use
Mildly Acidic	Alkaline	Solvent
30 – 60 Minutes	Varies as needed	Until wax is completely softened and dissolved
140 – 176°F 60 – 85°C	Ambient – 204°F Ambient – 95°C	50 – 68°F 10 – 20°C
20 – 30% by volume in water	0.7 – 1.75% by value	–
BONDERITE C-IC SCALEGON 7 AERO	**BONDERITE L-GP RUST BLOC AERO**	**BONDERITE C-MC 6802™ AERO**
Turco® Scale Gon #7	Turco® Rust Bloc	Turco® 6802™
–	Pail	Drum
Drum	–	Pail, Tot
–	Pail	Drum
–	Drum, Pail	Drum
BONDERITE C-IC SCALEGON 7 AERO is a mildly acidic yellow liquid used as a single step or in combination with the proven BONDERITE Jet Engine Process to condition and remove high temperature scale from jet engine parts. This process is designed to facilitate non-destructive testing (penetrant) and reconditioning of parts. It is especially suited for the treatment of CrNi and Ni Alloys such as Nimonic® and ferritic chromium steels.	**BONDERITE L-GP RUST BLOC AERO** is an alkaline liquid used as a rust inhibiting rinse additive or cleaner. It provides temporary in-plant rust protection for steel and cast iron.	**BONDERITE C-MC 6802™ AERO** is a clear, amber liquid developed to remove platter's wax and similar low melting stop-off compounds by immersion in the heated product. It is free of chlorinated hydrocarbons, phenols and chromate. It can be used on all metals.



Engine Maintenance: Compressor Washers

Applications	Compressor Cleaners	•	•	•
Substrate	Aluminum	•	•	•
	Composites Material	•	•	•
	Magnesium	•	•	•
	Magnesium – Die Cast	•	•	•
	Mild Steel	•	•	•
	Stainless Steel	•	•	•
	Titanium	•	•	•
	Ferrous	•	•	•
	Nonferrous	•	•	•
Product Characteristics	Consistency	Liquid	Liquid	Liquid
	Form	Concentrated	Ready-to-Use	Concentrated
	Chemistry	Solvent	Alkaline	Alkaline
Process (Spray)	Time (Minutes)	Varies as Needed	Varies as Needed	Varies as Needed
	Temperature °F / °C	Ambient	Ambient	Ambient
	Mix Ratio (Product : Water)	1 : 4 Ratio	Used as Received	1 : 4 Ratio
Products	New Product Name	**BONDERITE C-MC 5884™ AERO**	**BONDERITE C-MC 6783-10™ AERO**	**BONDERITE C-MC 6783-50™ AERO**
	Known as	Turco® 5884™	Turco® 6783-10™	Turco® 6783-50™
Regional Availability & Packaging	Asia Pacific	Drum, Pail	Pail	Drum, Pail
	Europe / Middle East / Africa	Drum, Pail	–	Pail
	Latin America	Pail	Drum	Drum, Pail
	North America	Drum, Pail	Drum, Pail	Drum, Pail
Description		**BONDERITE C-MC 5884™ AERO** is a concentrated liquid cleaner which effectively removes oil, salt and solid deposits from compressor blades, guide vanes and rotors of in-service jet engines. Periodic cleaning of these components is necessary to avoid power loss, abnormal temperature increases and increased fuel consumption.	**BONDERITE C-MC 6783-10™ AERO** is an aqueous compressor cleaner which effectively removes oil, salt and solid deposits from compressor blades, guide vanes and rotors of in-service turbine engines. Periodic cleaning of these components is necessary to avoid power loss, abnormal temperature increases, increased fuel consumption and excessive NOx emissions. It is supplied in a ready-to-use liquid form.	**BONDERITE C-MC 6783-50™ AERO** is a concentrated aqueous compressor cleaner which effectively removes oil, salt and solid deposits from compressor blades, guide vanes and rotors of in-service turbine engines. It is used at 20 percent by volume in distilled, demineralized or good drinking quality water. For cold weather (below 32°F / 0°C) add 20 percent by volume isopropanol, ethanol or glycol.

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BONDERITE Nomenclature	
BONDERITE C-xx	Cleaners
BONDERITE C-AK	Alkaline Cleaner
BONDERITE C-IC	Acid Cleaner
BONDERITE C-MC	Maintenance Cleaner
BONDERITE L-xx	Lubricants
BONDERITE L-GP	General-Purpose

BONDERITE Nomenclature	
BONDERITE M-xx	Metal Pretreatment
BONDERITE M-CR	Chromating
BONDERITE M-NT	New Generation
BONDERITE S-xx	Specialities
BONDERITE S-MA	Maskants
BONDERITE S-ST	Paint Stripper

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TECHNOMELT®
TEROSON®
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