

# COVAL METAL

## Technical Data Sheet

Revised 11-2023. Please reference the latest copy available at [www.covaltechnologies.com](http://www.covaltechnologies.com)

Single component **Coval Metal** completely protects painted and unpainted metals from corrosion and graffiti.

### I. PRODUCT DESCRIPTION

COVAL METAL is a thin film, single component coating designed to protect metal from corrosion and abrasion. COVAL METAL creates a covalent bond with a variety of metals that cross-link with the substrate and itself. This high-tension cross-link creates an extremely hard, durable, waterproof, non-toxic, clear surface. It is resistant against mild acids, hydrogen sulfide gas (H<sub>2</sub>S), galvanic corrosion, abrasion, graffiti, and scale & dirt buildup. COVAL METAL is available in gloss, satin, or matte finish.

### II. RECOMMENDED USES

Painted metal surfaces  
Powder coated metals  
Stainless steel  
Aluminum  
Other ferrous and non-ferrous metal

**CAUTION:** Coval Coatings are professional grade coatings and should only be applied by experienced professionals.

### III. PRODUCT CHARACTERISTICS

#### A. PROPERTIES

Color: Clear to slightly yellow  
Always dries clear  
Vehicle Type: Solvent Base  
Flash Point: (C Penskey-Martens closed Cup) 77°F  
VOC\*: less than 100 g/L  
Weight per Liter: 7.36 lb.  
Semi-breathable  
Dry film thickness: 0.2-0.4 mils

\*The solvents in Coval products are exempt due to EPA determination that they do not contribute to greenhouse gases.

#### B. TESTING

ASTM D-4060 Taber Abrasion:	
1000g @1000	30 mg
500g @1000	3 mg
ASTM D-3363 Film Hardness, Pencil	9H
ASTM D3045 Heat Resistance	230°C
ASTM D4541 Adhesion	1700 PSI
ASTM D3359-97 Adhesion	4
ASTM B117-111 Salt Spray Scribed	6

#### SCAQMD & PROP 65

COVAL METAL contains less than 100 g/L VOC and exceeds SCAQMD Rule 1113 requirements, the highest air quality control standards in the United States. COVAL METAL contains no known carcinogens under Proposition 65, California's Drinking Water and Toxic Enforcement Act of 1986.

#### C. DRY TIME

Touch: 1-3 hours  
Through/Re-coat: 3-5 hours  
Full Cure: 7 Days  
(Drying Time at 77°F & 50% Relative humidity)

#### D. SPREAD RATE PER COAT (recommended)

600-800 sq.ft./gal

### IV. APPLICATION INSTRUCTIONS

#### A. GENERAL

1. COVAL METAL works best when sprayed, to achieve optimum finish and appearance.
2. With all methods of application, always mask off adjacent surfaces to keep them free of drips or overspray.
3. If the project does not allow for spraying, use a microfiber covered sponge and wipe on. This type of alternate application will not yield the same spread coverage and will not yield the optimum smooth finish as spraying.
4. When applying outdoors:
  - a. Make certain the ambient temperature is between 45°F and 105°F, and RH is under 80%.
  - b. Make certain that there is no chance of rain or dew for a minimum of 5 hours after the estimated time of completion of the coating process.
5. Best practice: Apply enough coating to "wet-out" the surface and leave it to dry. Target wet film thickness of .2-.4 mils. Do not exceed .4-.5 mils, wet film thickness. MORE IS NOT BETTER. If coating is applied too thick, it will sag on vertical surfaces and attempt to crosslink away from the surface, which may cause fracturing or delamination. Over-applying the coating will either destroy the coating or cause whatever the coating is applied on to peel.
6. Coval coatings are specifically designed for the substrate listed in this Data Sheet and should never be applied to substrates not listed.
7. Painted Surfaces: Coat a small inconspicuous area to ensure the paint can withstand the solvents in the coating before coating the entire surface.

#### B. Product Preparation

Mix the contents thoroughly, especially the satin or matte finish. The matting agent must be re-suspended into the liquid to ensure performance of the coating.

#### C. Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, and other foreign material. Heavy rust must be sandblasted or ground off. COVAL METAL can be sprayed, dipped, or wiped on. It is fast drying, with 2 coats recommended for maximum protection.

#### D. New Uncoated Metal

1. The entire surface must be cleaned of any rust, scale, oil, and grease.
2. Use a metal decontamination / neutralization chemical to neutralize any impurities in the metal and prevent spot rust prior to the coating.
3. On new steel, make certain to abrasive blast or grind off 100% of the slag from that process.



4. COVAL METAL can be applied over rust and corrosion primers or pipe coatings per the manufacturer's instructions.
5. After the primer or paint has dried to full cure, apply COVAL METAL per application instructions.

**IMPORTANT** - When applying over primers, follow instructions regarding the manufacturer's re-application time.

**IMPORTANT** - When applying over steel or iron that has no primer, apply two coats of COVAL METAL. Wait until the first coat is completely dry (3-5 hours minimum) before applying a second coat.

### E. Old Metal with Existing Primer or Paint

1. Inspect the condition of the primer and paint to ensure it is sound and free of peeling or chips and that there is good adhesion.
2. Abrasive blast to a minimum Commercial Blast Clean SSPC-SP-6 method or abrade off any existing peeling paints until reaching a solid base or repair by sanding with 220 grit sandpaper or lower, then re-paint as needed.
3. When re-painted areas are dry and cured, clean the surface with a damp rag with fresh water to prevent removal of the existing paint.
4. When the surface is clean and dry, apply COVAL METAL.

### F. Aluminum, Copper, Brass, Bronze, & Stainless Steel

1. Clean the entire surface to remove all oil and grease.
2. Use a decontamination primer to neutralize any impurities in the metal – follow manufacturer's instructions.
3. Once dry, COVAL METAL can be applied per application instructions.

### G. Powder Coated Metals

1. Inspect the surface to ensure there are no breaches in the powder coating. If any appear, re-coat or prime with matching paint to touch up.
2. Clean the entire surface to remove all dirt, oil, or grease.
3. Rinse with fresh water.
4. When the surface is clean and dry, COVAL METAL can be applied per application instructions.

### H. Test Area:

Due to the wide variety of metals and the various methods of application and environments, always test COVAL METAL in an inconspicuous location to ensure adhesion and determine that the desired look is achieved. There will be a slight enhancement in appearance from the original surface, which will vary based on different finishes.

**IMPORTANT** – COVAL METAL is clear but on some white paints or white powder coats, color may be altered to appear off-white or slightly yellow once the coating is applied, so always do a small test on white surfaces in an inconspicuous spot to determine if any possible color change is acceptable.

### I. APPLICATION TYPES

1. Spray on

- a. Stir the contents thoroughly if using satin or matte finish. The solids must be re-suspended in the liquid to ensure performance of the coating. Re-stir every 15-20 minutes.
- b. When surface preparation is complete and surface is dry and free of dust, begin application using a High Volume, Low Pressure (HVLP) spray gun with a 1.0-1.4 mm size tip and the pressure set at approximately 55-103 kPa/8-15 psi tip pressure.
- c. For larger jobs, use an Acetone Sprayer. With Coval Metal Matte & Satin finishes, use a gray cone jet tip (TX-VK8) or brown cone jet tip (TX-VK12). For the Gloss finish, use a red fan tip (F110-04).
- d. On a separate piece of cardboard covered with aluminum foil, first spray a test pattern in the middle with enough coating to cover but not puddle.
- e. When spraying outside, if there is high wind, this will affect the quality of the finish, as blowing wind can disrupt the spray pattern from your sprayer. It can also contribute to contamination of the finish from blowing dust. It may be necessary to erect a windscreen to protect the area.
- f. Once the spray pattern is achieved on the test cardboard, spray one coat in a cross-pattern; left to right, then up and down. This will provide sufficient coverage and will help prevent holes in coverage.

### CAUTION:

If using the spray application method in an enclosed space, make certain to tent off the area being sprayed with plastic tarps to avoid contaminating other surfaces with overspray. Tented and enclosed areas are required to be positively supplied with fresh air and have ventilated exhaust to outside using fans. Always eliminate any open flame or possible source of ignition such as a pilot light, or anything that may spark, as this may cause ignition and explosion of fumes and vapors. (In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.) Fumes disperse within the hour.

2. Wipe on with microfiber sponge
  - a. Clean the surface per preparation instructions.
  - b. Select the appropriate sponge width based on the surface area being coated.
  - c. Using only good quality microfiber sponges (test it first to ensure the coating doesn't break down the sponge too quickly), wearing gloves, apply COVAL METAL in a cross-pattern or up and down. To obtain the best results, do not overwork the coating, since it dries quickly.
  - d. Do not bear down with the sponge. Use light strokes and use the tip of the sponge to smooth out the coating.
3. Dipping
  - a. Clean the surface per preparation instructions
  - b. Stir the contents before dipping if you are using Satin or Matte.



- c. Dip the pieces and agitate back and forth and up and down, then remove to dry rack.
- d. In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.

### V. CLEAN UP

Clean tools and flush equipment with acetone at least twice immediately after application.

**IMPORTANT** - When the coating is dry the tools will not clean up with acetone or any other solvent.

### VI. STORAGE

- A. If excess coating remains: Put a nitrogen or argon blanket on the top of the remaining liquid in the container, OR
- B. Move the remaining coating to a smaller container with as little air/oxygen in the container as possible.
- C. Use only HDPE containers.
- D. Store in a cool, dry location.
- E. Do not store solvent-based products in the sun, warm storage area, or in a sun-heated vehicle as overly heated products can turn dark in color and remain tinted when applied.
- F. Shelf life: 12 months unopened
- G. Store in a temperature controlled environment not to exceed 80°F.
- H. The coating should be very thin and clear to slightly yellow. If you see that it has changed viscosity and/or is a deep yellow or brown color, then that coating has expired (oxidized) and should not be used.

### VII. CARE AND MAINTENANCE

- A. For normal cleaning, lightly spray the surface with a hose or wipe it down with a damp rag to remove most dirt and spills on the surface.
- B. If an area is damaged or is mechanically abraded, clean the area thoroughly and reapply COVAL METAL.
- C. If the substrate is damaged at the same time, make the necessary repairs first, and then re-apply COVAL METAL.
- D. There is no need to sand it, as this is not a mechanical bond. The only reason to sand would be if it is required to properly clean the area or remove deep scratches.

### VIII. SAFETY AND ENVIRONMENTAL

- A. During application, turn off all pilot lights or open flames in the building.
- B. Wear OSHA approved PPE, including OSHA 1910.134 and ANSI Z88 2 respiratory protection and safety goggles.
- C. Fresh air and exhaust should be provided in enclosed work areas. If inhaled, remove affected person to fresh air and call physician immediately if physical difficulties occur. Vapor will clear in about an hour.
- D. Wear butyl-rubber gloves and other skin protection to avoid contact. In the event of contact with skin, wash skin thoroughly with soap and water.
- E. Chemical safety goggles or splash shields are required. Do not wear contacts without eye

protection. Immediately flush your eyes with water for 15 minutes after contact and get medical attention.

- F. If accidentally swallowed, rinse mouth thoroughly and obtain immediate medical attention.
- G. In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.
- H. Consult the Safety Data Sheet (SDS) for more information concerning proper Personal Protective Equipment and precautionary measures that are recommended for proper protection while handling this product.