COVAL METAL COAT

Technical Data Sheet

www.covaltechnologies.com

Coval Metal, is a clear, thin-film, protective sealer 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 (H2S), galvanic corrosion, abrasion, graffiti, and scale & dirt buildup. **Coval Metal** is available in gloss, satin, or matte finish.

II.RECOMMENDED USES

A. Direct to metal
B. Painted metal surfaces
C. Powder coated metals
D. Stainless Steel
E. Aluminum
F. Brass
G. Other ferrous and non-ferrous metals

III.PRODUCT CHARACTERISTICS

A.PROPERTIES

1. Color: Clear, or clear to slight amber (depending on temperature and humidity)
2. Finish: Clear-Gloss
3. Vehicle Type: Solvent Base
4. Flash Point: Penskey-Martens closed cup -9°C/15°F
5. VOC: Less than 100 g/L
6. Specific Gravity: .82-.85

B.DRY TIME

1. Drying Time is based on 70% RH, @70°F: (Coal Metal is a moisture cured coating and higher humidity will shorten drying time)
2. Touch Dry: 2-3 hours
3. Foot traffic allowed in 6-8 hours, heavy traffic allow 24 hours
4. Two Coats are recommended. Allow 24 hours between each coat.
5. Full Chemical Resistance Cure: 24 hours after final coat

C.COVERAGE

Coverage will vary depending on the porosity and texture of the substrate, as well as the applicator's method of application. Below are typical coverage rates:

Coverage Rates 1st Coat

Substrate:	Sq.Ft. / Gal Coverage
Painted and Powder Coated Metals	800-1000
Non-Coated Metals	600-800

****Coverage rates will vary depending on substrate and porosity****
An additional 200-400 sq.ft/gal can be achieved on additional coats.

D.TESTING RESULTS

ASTM D-4060 Taber Abrasion:	
1000g @1000	30 mg
500g @1000	3 mg
ASTM D-3363 Film Hardness, Pencil	9H
ASTM D3045 Heat Resistance	445 F
ASTM D4541 Adhesion, Pull Off	1700 PSI
ASTM D3359-97 Adhesion, Tape	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.

Staining Agent	Resistance Time (h)	Cleaner Required
10% Citric Acid	12	Dry Cloth
Acetone	48+	Dry Cloth
Balsamic Vinegar	12	Dry Cloth
Betadine	6	Wet Cloth
Brake Fluid	48+	Dry Cloth
Coffee/Tea	48+	Dry Cloth
Gasoline	48+	Dry Cloth
Permanent Marker	48+	Solvent
Red Wine	48+	Dry Cloth
Spray Paint	48+	Solvent

E.INDOOR SAFETY

Before application, **1) TURN OFF ALL PILOT LIGHTS OR OPEN FLAMES IN THE BUILDING.**
During application
1) Always wear safety googles 2) Wear an OSHA approved organic vapor respirator.

IV.APPLICATION INSTRUCTIONS

A. SURFACE PREPARATION

1.Sweep, Dust and Decontaminate

IMPORTANT: REMOVE ANY SILICONE

Decontaminate any surface to be coated, removing oils, grease, wax, fatty acids, and other contaminants by using detergents, etching solutions, heavy duty cleaner/degreaser, steam cleaning, or mechanical removal. Ensure the polished surface is beading water and has the final permanent look desired.

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2.New Uncoated Metal

a. The entire surface must be cleaned of any rust, scale, oil, and grease.
b. Use Coval D260 Metal Decontamination / neutralization chemical to neutralize any impurities in the metal and prevent spot rust prior to the coating. (See Coval D260 SDS & TDS for instructions)
c. On new steel, make certain to abrasive blast or grind off 100% of the slag from the process.
d. **Coval Metal** can be applied over rust primers, epoxy, painted surfaces and powder coatings per manufacturer's instructions. All surfaces should be tested first for compatibility
e. 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 manufacture's re-application time.

3.Old Metal with Existing Primer or Paint

a. 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.
b. 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.
c. Only use a soft abrasion media or water jetting. The goal cleaning or coating removal without altering the roughness of the surface.
d. When the surface is clean and dry, apply **Coval Metal**.

4.Powder Coated Metals

a. 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.
b. Clean the entire surface to remove all dirt, oil, or grease.
c. Rinse with fresh water.
d. When the surface is clean and dry, **Coval Metal** can be applied per application instructions.

5.Aluminum, Copper, Brass, Bronze, & Stainless Steel

a. Clean the entire surface to remove all oil and grease.
b. Use a decontamination primer to neutralize any impurities in the metal – follow manufacture's instructions.
c. Once dry, **Coval Metal** can be applied per application instructions.

6.Test Area

a. When using **Coval Metal** on a new substrate for the first time, clean the area, then test it on a small, inconspicuous area to ensure adhesion and determine that the desired look is achieved. Due to the wide variety of metal surfaces and the various methods of application and environments, different reactions may occur. Once satisfied, work can begin.
b. There will be a slight enhancement or change in appearance from the natural surface when using **Coval Metal**. It will depend on the metal finish.
c. If ever in doubt about a coating, TEST it first.

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. A white pigment can be added to Coval to counter this. Contact your Coval Representative for more information

B. GENERAL

1. **Coval Metal** is applied with an HVLP or an acetone pump sprayer and a microfiber applicator pad and applicator.

3. **(HVLP APPLICATION)** 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.
   a. Test Spray – 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 to ensure your spray pattern is consistent and to the desired angle.
   b. 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.

IMPORTANT – 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.

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 dispense within the hour.

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4. **(WIPE ON APPLICATION)** Using a microfiber sponge.
   a. Clean the surface per preparation instructions.
   b. Select the appropriate sponge width based on the surface are 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 direction. To obtain the best result, do not overwork the coating, since it dries quickly.
   d. Do not bear down with the sponge. Use light strokes and use the tip or edge of the sponge to smooth out the coating.

5. **(Dipping Application)**
   a. Clean the surface per preparation instructions.
   b. Stir the contents before dipping if you are using the drop in matting agent.
   c. Dip the pieces and agitate back and forth and up and down, then remove to a drying rack.
   d. In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.

6. If applying outdoors, make certain the ambient temperature is between 39°F and 90°F , and Relative Humidity (RH) is 90% or lower. Check the forecast for low wind and no chance of rain for a minimum of 5 hours after the estimated time of completion of the coating process.

7. Confirm and schedule so that no morning dew, or sprinkler watering occurs 5 hours minimum after application.

8. BURNISHING: **Coval Metal Gloss** can be burnished if dry to the touch and as needed to enhance the appearance and smooth the surface. Use a standard natural hair heat generating pad or diamond impregnated pad designed for polishing.

9. Two coats will enhance the wear and stain resistance of the sealer.

C. CLEAN UP

1. Clean tools and flush equipment with acetone twice (minimum) immediately after application.
2. Remove spray tips and soak in a solvent (recommended acetone)

IMPORTANT – Once the coating is dry, the tools will not clean up with any solvent.

D. STORAGE

If excess coating remains in a container, Coval recommends the following:

1. Put a nitrogen or argon blanket on the top of the remaining liquid in the container, (Argon gas can be found in small containers, sold as wine preservers on amazon) OR
2. Move the remaining coating to a smaller container with as little air/oxygen in the container as possible. Use HDPE containers.
3. Store in a cool, dry location. 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.
4. Shelf life: 12 months unopened.

V. CARE AND MAINTENANCE

1. Wipe up spills as soon as possible.
2. Do not use heavy abrasive pads on auto-scrubbers.
3. A soft brush or white buffing pad is sufficient to remove stains from the surface once cured.
4. Neutral pH cleaners, disinfecting cleaners, and de-greasers will not damage the finish and can be used regularly.
5. Remove paint spills or graffiti with rubbing alcohol or acetone and rinse with water.
6. If high traffic areas show wear, clean area with 3M maroon scotch bright pad. Tack floor with acetone keeping the leading edge of the microfiber pad always moving in the same direction. Then apply a fresh coat of Metal Coat.

VI. SAFETY AND ENVIRONMENTAL

1. **INDOORS, TURN OFF AND EXTINGUISH ALL PILOT LIGHTS OR OPEN FLAMES IN THE BUILDING.**
2. Always wear OSHA approved 1910.134 and ANSI Z88 2 respiratory protection.
3. 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.
4. 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.
5. Chemical safety goggles or splash shields are required. Do not wear contacts without eye protection. Immediately flush eyes with water for 15 minutes after contact and get medical attention.
6. If accidentally swallowed, rinse mouth thoroughly and obtain immediate medical attention.
7. In enclosed areas, make sure to have an observer watching the applicator for any signs of physical distress.

Please see Coval FAQs for the specific product online at www.covaltechnologies.com.

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