

**COATING SYSTEM SPECS:
TWO-COMPONENT SYSTEM FOR
OPEN WEB AND LONG SPAN STEEL
BEAMS, ENCLOSED OR EXPOSED,
INTERIOR AND EXTERIOR, AND
METAL CONDUIT SYSTEMS.**

**1.0 PRODUCT NAME
ENERCHRON® V50**

**2.0 SUPPLIER
HELIOS ENERGY PRODUCTS, INC.**
P.O. Box 9 Diamond Springs, California 95619
Office 916-332-5424 Fax: 888-326-0202
www.enerchron.com
email: mailto@enerchron.com

3.0 PRODUCT DESCRIPTION

A non-polluting solvent-free, two-component, 100% solids Coating System that is self-priming, and is a strong high-chemical resistant barrier against potable water, salt water, and sewage water. It resists attacks from acids and alkalines. It has a smooth glossy surface appearance, with no exudation, it will cure at low near freezing temperatures, will be tack-free in 2 to 4 hours and is dry cured in 7-11 hours. It has high bond strength, high shear resistance, and has long term anti-corrosion protection.

3.1 BASIC USES

ENERCHRON V-50® is water-insoluble and is designed to prolong the life of all steel structures and metal conduits, for preservation and anti-corrosive protection. It cures chemically, has no solvent bleed-off, releases no toxic fumes, may be used in confined enclosed areas, and has the highest chemical resistance. It may be used in difficult climatic areas, at high and low temperatures and humidities. It is self-priming and may be recoated in approx. two hours, eliminating much of the downtime with other labor intensive coating systems.

3.2 LIMITATIONS

ENERCHRON® V50 must be applied to a sound and clean surface. It cannot be applied to any generally unclean substrate. It must be applied before any flash-rusting takes place. Flash rusting may occur when clean steel is exposed to high humidity. Moisture condenses on any surface that is colder than the dew point of the surrounding air. It is recommended that the temperature of the

steel surface be at least 5 degrees F. (3 degrees C.) above the dew point during blast cleaning. Steel that is wet abrasive blast cleaned may rust rapidly. Steel contaminated with soluble salts develops flash-rusting rapidly at high humidity temperatures. After wet abrasive blast cleaning, clean water should be used for rinsing. Under no circumstances should steel be permitted to flash-rust before coating because the flash-rust will not have a tight bond to the surface and will cause product failure. It is recommended that ample coating should be applied as a prime coat. The dry paint film thickness above the peaks of the profile of the steel should equal the thickness known to be needed for the desired protection. If the dry film thickness over the peaks is inadequate, premature rust-through or failure will occur. The coating thickness must be properly measured to assure adequate substrate protection on the first or prime coat. The coating system shall not be used on steel piping conveying water at a temperature exceeding 180 degrees F. (82 degrees C.).

3.3 TOXICITY

Causes skin and eye irritation. Respiratory Protection is not needed under normal conditions of use. A NIOSH/MSHA approved organic vapor respirator, safety goggles, and chemical resistant gloves are recommended. There are no components present in this product which require reporting under statute 40 CFR 372.

3.4 COMPOSITION AND MATERIAL

ENERCHRON® V50 is a Zero-VOC, non-polluting, solvent-free, two-component Poly-Amine Coating System, which is water insoluble and a barrier against all moisture and water. It has a high chemical resistance and may be used for potable water, sewage water, and salt water applications. It must be applied to a dry surface. It may be applied at a wide temperature and humidity range.

3.5 PACKAGING

Available in 2, 10 and 100 gallon kits, consisting of equal gallons of "A" and "B" components, for an equal mix by volume.

SPEC-[®]
DATA

This Spec-Data Sheet conforms to editorial style prescribed by The Construction Specifications Institute. The manufacturer is responsible for technical accuracy.

3.6 SHELF LIFE

One year at 20 degrees C.

3.7 COLORS

Standard colors are: White, Special colors may be formulated to match particular needs.

3.8 TRANSPORTATION INFORMATION

DOT - Alkaline Liquid NOS; Corrosive material NA 1719.

FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL APPLICATION ONLY. KEEP OUT OF THE REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. CONSULT MSDS SHEET FOR MORE INFORMATION.

4.0 TECHNICAL DATA

See Table 1.

5.0 INSTALLATION

The ultimate performance of ENERCHRON® V50 depends on application by Professional Applicators, which are licensed on a non-exclusive basis.

5.1 SURFACE PREPARATION

The cost of surface preparation, both material and labor, and the labor costs of the application, in total, normally is higher than the cost of the coating material and is worthy of consideration. It is essential that the three facets, surface preparation, application methods of the coating, and the coating material, be considered as the total coating system. Limitation or neglect of one of the aspects will jeopardize the entire system. Clean all surfaces. The substrate must be sound, clean, free from oil, grease, loose rust, and any foreign matter. Surface preparation is best accomplished by Solvent Cleaning per

SSPC-SP1 or Hand Tool Cleaning per SSPC-SP2. For better performance, use Commercial Blast Cleaning per SSPC-SP6. The surface must be dry and free from all contaminants to ensure good adhesion.

5.1a PREVIOUSLY PAINTED STEEL SURFACES

If in sound condition, clean the surface of all foreign material, oil, grease, dirt, and oxides. Remove all loose peeling or failing paint, remove all loose rust and flash-rust per Hand Tool Cleaning SSPC-SP2 or Commercial Blast Cleaning SSPC-SP6.

5.1b ALUMINUM

Remove all oil, grease, dirt, oxides and other foreign matter by Solvent Cleaning per SSPC-SP1.

5.1c GALVANIZED METAL

Allow to weather for a minimum of 6 months before coating. Solvent Cleaning per SSPC-SP1.

5.1d PVC, FIBERGLASS

Remove all oil, grease, dirt, and any other foreign material by Solvent Cleaning per SSPC-SP1.

5.2 APPLICATION

5.2a Materials Preparation:

Each component of ENERCHRON® V50 primer/finish coat shall be thoroughly stirred before using. To prepare the coating for application add equal volumes of the A and B component to a mixing vessel and mix vigorously for at least two minutes with a power agitator. Mix only the amount of material that will be used within its potlife, which is 35 min. Follow with proper brush or roller application. With the use of plural component conventional or airless spray equipment no premixing is necessary, but the A and B component material must be mixed separately and be fed at equal volume proportions to a mixing chamber prior to reaching the gun. Make sure of a thorough mixing method. Coating will not cure if not properly mixed.

5.2b Reducer:

Do not use solvents or reducers for thinning. Reduction affects the drying, curing and proper film qualities of the coating. Elevating the temperature of the coating will both thin it and provide a faster set and cure. **DO NOT THIN.**

5.2c APPLICATION TEMPERATURE

Recommended application temperatures, 40-100F. / 5-40C. For cold weather application, store the coating material at a minimum of Room Temperature and remove just prior to using.

5.2d COATING THICKNESS

ENERCHRON® V50 is a self-priming coating and shall be applied at a minimum of two coats to a

minimum of 10 mil wet/dry film thickness all total, nor more than 30 mil. The second coat shall be applied as soon as convenient, but no later than within 6 hours.

5.2e CLEAN-UP

Uncured material can be removed with lacquer thinner. Clean all equipment and flush lines with Lacquer Thinner. Cleaning must be done immediately after use of the equipment. Cured material can only be removed mechanically. For spillage collect, absorb, and dispose of in accordance with applicable local regulations.

6.0 WARRANTY

Helios Energy Products, Inc. warrants its product to be free of manufacturing defects. Our products will meet our published physical properties when applied in accordance with our directions and tested in accordance with ASTM standards. Proven defective products will be replaced on a Gallon for Gallon limited one year warranty basis only. Applicators have a legal responsibility for proper applications methods as per instructions and specifications. Helios Energy Products, Inc. shall not be liable for damages of any sort, including any removal or consequential damages, resulting from any claimed breach of any warranty, whether express or implied. Helios Energy Products, Inc. shall also not be liable for use of this product in a manner to infringe on any rights or patents held by others.

7.0 MAINTENANCE

Maintenance is typically not required. If the coating is damaged, remove damaged area, prepare surface again and reapply ENERCHRON® V50.

8.0 AVAILABILITY AND COST

ENERCHRON® V50 is available through Distributors, Dealers and Licensed Contractors. Cost may vary in local areas, variations in labor rates, job size and job conditions.

TYPICAL PHYSICAL PROPERTIES TABLE 1 (Not to be Construed as Specifications)	
Coating / Material VOC:	0 G/L
pH:	7.5 - 8.5
Gel Time @ 20 deg. C.:	45 Min.
Tack Free @ 20 deg. C.:	2-4 Hrs.
Dry Cure @ 20 deg. C.:	7-11 Hrs.
Spread @ 1 Mil per U.S. Gal. Wet / Dry	1604Sq. Ft.
Theoretical Lab:	194 Sq. meter
Exudation:	None
Impact Test	
2 Months @ 20 deg. C.:	70 in/lb
2 Months @ 60 deg. C.:	70 in/lb
Mandrel Test 15mm	
2 Months @ 20 deg. C.:	180 <0
2 Months @ 60 deg. C.:	60 <0
Boiling water test 6hrs. @ 96 deg. C. Adhesion on sandblasted mild steel:	Unchanged
After curing @ 20 deg. C.:	100% RH.
After curing @ 5 deg. C.:	45% RH.
Surface Appearance:	Smooth Glossy

CHEMICAL RESISTANCE	Test Duration Months													
	1/4	1/2	1	2	3	4	5	6	7	8	9	10	11	12
Water Deionized	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Salt Water	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sulphuric acid 10%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sulphuric acid 30%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sulphuric acid 70%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hydrochloric acid 10%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hydrochloric acid 20%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hydrochloric acid 36%	+	+	+	+	A	D								
Acetic acid 5%	+	+	+	+	D									
Acetic acid 10%	+	A	D											
Ammonia 10%	+	+	+	+	+	+	A	A	A	A	A	D		
Caustic soda 20%	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Acetone	D													
Butanol	D													
Butyl acetate	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Diacetone alcohol	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ethyl glycol	A	A	A	A	A	A	A	A	A	D				
Ethanol 50%	+	+	A	A	A	A	A	A	A	A	A	A	A	A
Ethanol 96%	D													
Octanol	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Xylene	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Toluene	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Benzene	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Trichlorethylene	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Crude oil	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gasoline 98 octane	+	+	+	+	+	+	+	+	+	+	+	+	+	+

+ = resistant, A = attacked, D = destroyed

MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT NAME: **ENERCHRON® V50**

HMIS CODES: **H F R P**

0 0 0 B

MANUFACTURER'S NAME: **HELIOS ENERGY PRODUCTS, INC.,
P. O. Box 9 Diamond Springs, California 95619**

EMERGENCY PHONE: **916-332-5424**

DATE REVISED: **01/30-91**

REASON REVISED: **UPDATE FORMULA**

SECTION II HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COMPONENTS	OCCUPATION EXPOSURE LIMITS	VAPOR PRESSURE WEIGHT
	CAS NUMBER OSHA PEL ACGIH TLV OTHER	mm Hg @ TEMP PERCENT

***** NO REPORTABLE QUANTITIES OF INGREDIENTS ARE PRESENT *****

No toxic chemical(s) subject to the reporting requirements of section 313 of title III and of 40 CFR 372 ARE PRESENT

TRANSPORTATION INFORMATION: **DOT - Alkaline Liquid NOS; Corrosive Material NA 1719**

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: Not applicable	SPECIFIC GRAVITY (H ₂ O=1): 1.2
VAPOR DENSITY: N/A	EVAPORATION RATE: N/A
COATING V.O.C. : N/A	MATERIAL V.O.C. : N/A
SOLUBILITY IN WATER: INSOLUBLE	APPEARANCE AND ODOR: WHITE OR COLOR; FAINT EPOXY ODOR.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 480 F	FLAMMABLE LIMITS IN AIR BY VOLUME -LOWER: N/A
UPPER: N/A	METHOD USED: Closed Cup

EXTINGUISHING MEDIA: **Foam, Alcohol Foam, CO₂, Dry Chemical, Water Fog, Other**

SPECIAL FIREFIGHTING PROCEDURES: **Wear positive pressure self-contained breathing apparatus.**

UNUSUAL FIRE AND EXPLOSION HAZARDS: **None known; Not determined**

SECTION V - REACTIVITY DATE

STABILITY: **Stable**

CONDITIONS TO AVOID: **High heat; poor ventilation.**

INCOMPATIBILITY (MATERIALS TO AVOID): **None known.**

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: **Thermal decomposition of epoxy resins should be treated as potentially hazardous substances.**

HAZARDOUS POLYMERIZATION; WILL NOT OCCUR: **Will not occur by itself, but masses of epoxy product plus an aliphatic amine will cause irreversible polymerization .**

SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: **Vapors are unlikely due to physical properties.**

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE EYE: **Essentially non-irritating to eyes.** SKIN: **Prolonged or repeated exposure not likely to cause skin irritation .**

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: **Not likely to result.**

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: **Swallowing any amount of mixed material will cause injury.**

HEALTH HAZARDS (ACUTE AND CHRONIC): **No relevant information found.**

CARCINOGENICITY: NTP? **NO** IARC MONOGRAPHS? **NO** OSHA REGULATED? **NO**

SARA HAZARD CATEGORY: **Under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (Sara Title III) considered to be a Health Hazard.**

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: **None known.**

EMERGENCY AND FIRST AID PROCEDURES EYES: **Irrigate immediately with water for at least 5 min.** SKIN: **Wash off in flowing water or shower.** INGESTION; **Consult a physician. Induce vomiting if any amount is ingested.** INHALATION: **Remove to fresh air if effects occur. Consult a physician. No specific antidote. Supportive care based on judgment of medical personnel.**

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Avoid contact with material. Wear protective clothing. Dike area of spill. Use diatomaceous earth or other absorbent material for proper disposal of liquid.**

WASTE DISPOSAL METHOD: **Bury in suitable landfill where permitted by appropriate government regulations.**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: **Use in proper ventilated areas.**

OTHER PRECAUTIONS: **Use proper protective clothing, goggles (safety glasses), and impervious gloves.**

SECTION VIII - CONTROL MEASURES

RESPIRATION PROTECTION: **Use MSHA/NIOSH approved respirator in poorly ventilated areas.**

VENTILATION: **Good general ventilation should be sufficient.**

PROTECTIVE GLOVES: **Use gloves impervious to soap and water.**

EYE PROTECTION: **Safety glasses or goggles.**

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: **Clean body covering clothing, apron, footwear, as necessary to prevent direct contact with material.**

WORK/HYGIENIC PRACTICES: **Safety showers and eye baths in the workplace are recommended.**

SECTION IX - DISCLAIMER

DISCLAIMER: **The information herein is presented in good faith and believed to be accurate. However, no warranty, express or implied, is given. It is the Buyer's responsibility to follow all proper safety regulations in the use of this product.**