



# DEVFLEX™ 4212HP

## High Performance Waterborne Acrylic Eggshell Enamel

Cat# 4212-XXXX

### PRODUCT DESCRIPTION

**Generic:** Waterborne Acrylic

**General Description:** A premium quality, direct to metal acrylic eggshell enamel for high traffic interior-exterior areas of commercial, institutional, residential and industrial structures. Features a non-yellowing film with excellent durability.

**Typical Uses:** May be applied directly to interior or exterior steel and aluminum, and to properly primed galvanized metal, wood or masonry surfaces.

#### Product Qualifications

OTC (Industrial Maintenance)	Yes
SCAQMD (Industrial Maintenance)	Yes
CARB (Industrial Maintenance)	Yes
LEED (New Construction)	Yes
LEED (New Schools / CHPS)	Yes
MPI Category 151 (Gloss Level 3)	Yes

### FEATURES

#### Advantages:

- Alkyd-like hardness and durability
- Excellent color retention
- High hiding
- Non-yellowing
- All purpose finish for multiple surfaces
- Excellent resistance to grease, oil and water
- Excellent flow and leveling
- Resists peeling and chipping
- Low odor and water clean-up
- Washable and scrubable
- Good abrasion resistance
- Easy application - brush, roll or spray
- Low odor and water clean-up
- Low VOC (<100 g/L)
- May be applied direct to steel and aluminum

**Limitations of Use:** Not recommended for large areas of exterior wood such as wood siding.

### SPECIFICATION DATA

**Color:** White, Custom Colors & Black

**Finish:** Eggshell, 10-25 units @ 60° (MPI Gloss Level 3)

**Clean-up Solvent:** Soap and water

**Weight/Gallon:** 10.84 lbs./gal. (1.30 kg/L) - varies with color

**VOC:** < 0.83 lbs./gal. (<100 g/L)

**Solids By Volume:** 36% ± 2%

**Theoretical Coverage at 1.0 Mil Dry:** 577 sq. ft./gal. (14.2 m²/L)

**Practical Coverage:** Apply at 144-385 sq. ft./gal. (3.5-9.5 m²/L).

Actual coverage may vary depending on substrate and application method.

**Recommended Film Thickness:** 1.5-4.0 mils (38-76 microns) dry - 4.2- 11.1 mils (107-282 microns) wet.

**Systems:** Please consult the appropriate system guide, the particular job specification or your ICI Paints Representative for proper systems using this product. Systems must be selected considering the particular environment involved.

**Dry Time (ASTM D 1640) @ 77°F (25°C) & 50% RH:**

To touch - 1 hour

To recoat - 4 hours

Substrate Temperature	50°F (10°C)	60°F (16°C)	77°F (25°C)
Minimum Recoat	36 Hours	30 Hours	4 Hours
Dry Hard	36 Hours	30 Hours	24 Hours
Maximum Recoat			
Self	No Limit	No Limit	No Limit

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

**Warning:** The above table provides general guidelines only. Always consult your ICI Paints Representative for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Paints Representative for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

**Shelf Life:** 1 year minimum - unopened

### PERFORMANCE DATA

#### PROPERTY

Abrasion Resistance

Pencil Hardness

Flexibility

Impact Resistance

Accelerated weathering

Service Temperature Limit

Flame Spread Rating:

#### TEST METHOD

ASTM D 4060 CS-17 wheels 1000g load, 300 cycles

ASTM D 3363

ASTM D 522, 1/8" mandrel

ASTM D 2794

ASTM G 23 QUV 1000 hrs

ASTM E 84

#### RESULTS

72 mg loss

2B

No cracking or flaking

160 in-lbs.

Excellent gloss retention

200°F (93°C) in air

Class A (0-25) over non-combustible surfaces.

Read Label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF1-0690

## GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean, and free of oil, grease, wax, polish, dirt, mildew, form release agents, curing compounds, efflorescence, loose and flaking paint and other foreign substances.

**New Surfaces: Steel and Aluminum** -Best results are obtained over a surface abrasive blasted to commercial blast cleanliness (SSPC-SP6) or ISO-Sa2. Performance over hand or power tool cleaned surfaces is dependent on the degree of cleaning. Prime with this product or DEVFLEX™4020 primer. For maximum corrosion protection, prime with DEVGUARD™4160 or DEVGUARD™ 4360 primers depending on local VOC regulations. When using colors tinted with more than 2 oz./gal. of ICI Paints Colorants, a primer is recommended. When using as a DTM finish without a primer, a minimum of two coats is recommended for best corrosion resistance. **Galvanized Metal**- Prime with DEVRAN® 205 or DEVRAN®203 epoxy primers, DEVFLEX 4020 acrylic primer or DEVGUARD 4160 or DEVGUARD 4360 primers depending on local VOC regulations. **Wood**- Interior, set nails and fill holes with latex spackle. Sand smooth. Dust clean. Self-prime or prime with PREP & PRIME® Wall & Woodwork 1020 primer sealer. Do not use this product with lacquer undercoats. Exterior, spot prime pine knots with PREP& PRIME® HYDROSEALER®6001 primer. Prime entire surface with PREP & PRIME HYDROSEALER 6001 primer. **Drywall**- Prime with PREP & PRIME Hi-Hide Wall 1000 primer sealer. **Concrete, Plaster and Masonry**- Cure at least 30days before painting. pH must be 10.0 or lower. Roughen slick poured or pre-cast concrete and remove sealers by chemical cleaning or abrasive blasting. Rinse thoroughly

with water and allow to dry. Remove loose aggregate. Prime interior concrete or plaster with this product or with PREP & PRIME Bond Prep 3030 primer sealer. Prime exterior masonry with PREP & PRIME HYDROSEALER 6001 primer. Fill concrete block with BLOXFIL® 4000 or PREP & PRIME 3010 fillers.

**Previously Painted Surfaces:** Remove oil or grease residue by washing. Rinse thoroughly with water and allow to dry. Dull glossy areas by light sanding. Remove sanding dust. Remove loose paint. Scrub heavy chalk areas and overhead areas such as eaves with soap and water. Remove all mildew by washing with a solution of 16 oz. (473 ml) liquid household bleach and two oz. (59 ml) non-ammoniated liquid detergent per gallon (3.785 L) of water. Rinse surfaces clean. Prime bare areas with primer specified under **NEW SURFACES**. Can be used self-primed over previously painted surfaces followed by a finish coat of this product.

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. **LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE.** Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead).

## DIRECTIONS FOR USE

**Tinting:** Tint the appropriate base with ICI Paints Colorants.

**Spreading Rate:** Apply at 144 -385 sq.ft./gal.(3.5-9.5 m<sup>2</sup>/L) or 4.2-11.1 mils wet (1.5-4.0 mils dry). Actual coverage may vary depending on substrate and application method. For best hiding, tint primers toward finish coat color.

**Application:** Mix thoroughly before use. May be applied by brush, roll or spray. No thinning required. Due to fast dry, brushing should be limited to small areas where a wet edge can be maintained. Rinse out brush in warm water periodically during extended brush application periods. If touch-up is required after the enamel

has set, wait until it has thoroughly dried. For airless spray, use a .015" tip. Adjust pressure as needed. Use two coats of this enamel for maximum durability and uniformity. Do not apply when surface or air temperature is below 50°F (10°C). Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

**Drying Time (ASTM D 1640):** At 77°F (25°C) and 50% R.H., dries to touch in one hour and to recoat in 4 hours. Low temperature, high humidity, thick films or poor ventilation will increase these times.

**Clean-up:** Clean immediately with warm, soapy water.

## PRECAUTIONS

**WARNING! HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF SWALLOWED. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. WHEN TINTED, CONTAINS ETHYLENE GLYCOL WHICH CAN CAUSE SEVERE KIDNEY DAMAGE WHEN INGESTED AND HAS BEEN SHOWN TO CAUSE BIRTH DEFECTS IN LABORATORY ANIMALS. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents.**

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.** If sanding, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **KEEP FROM FREEZING.** DS384-0506

## SHIPPING

**Flash Point:** None  
**Packaging:** 1 gallon (3.785L)  
5 gallons (18.925L)

**Shipping Weight:** 4 gallon case - 44 lbs. (20.0 kg)  
5 gallon pail - 54 lbs. (24.5 kg)

4212 (01/09)  
Ad Stock # 68838



Strongsville, Ohio U.S.A.  
800-654-2616  
[www.devoecoatings.com](http://www.devoecoatings.com)

**LIMITATION OF LIABILITY:** To the best of our knowledge, the technical data contained herein are true and accurate at the date of issuance but are subject to change without prior notice. We guarantee our product to conform to the specifications contained therein. WE MAKE NO OTHER WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. Liability, if any, is limited to replacement of the product or refund of the purchase price. LABOR OR COST OF LABOR AND OTHER CONSEQUENTIAL DAMAGES ARE HEREBY EXCLUDED.



# MATERIAL SAFETY DATA SHEET

prepared 04/06/09

## HAZARDS IDENTIFICATION (ANSI Section 3)

**Primary route(s) of exposure :** Inhalation, skin contact, eye contact, ingestion.

**Effects of overexposure :**

**Inhalation :** Irritation of respiratory tract. Prolonged inhalation may lead to mucous membrane irritation, drowsiness, dizziness and/or lightheadedness, headache, nausea, chest pain, coughing, central nervous system depression, difficulty of breathing, pneumoconiosis.

**Skin contact :** Irritation of skin. Prolonged or repeated contact can cause dermatitis.

**Eye contact :** Irritation of eyes. Prolonged or repeated contact can cause conjunctivitis, tearing of eyes, redness of eyes.

**Ingestion :** Ingestion may cause mouth and throat irritation, dizziness and/or lightheadedness, headache, nausea, gastro-intestinal disturbances, intoxication.

**Medical conditions aggravated by exposure :** Eye, skin, respiratory disorders, asthma-like conditions.

## FIRST-AID MEASURES

(ANSI Section 4)

**Inhalation :** Remove to fresh air. Restore and support continued breathing. Get emergency medical attention. Have trained person give oxygen if necessary. Get medical help for any breathing difficulty. Remove to fresh air if inhalation causes eye watering, headaches, dizziness, or other discomfort.

**Skin contact :** Wash thoroughly with soap and water. If any product remains, gently rub petroleum jelly, vegetable or mineral/baby oil onto skin. Repeated applications may be needed. Remove contaminated clothing. Wash contaminated clothing before re-use.

**Eye contact :** Flush immediately with large amounts of water, especially under lids for at least 15 minutes. If irritation or other effects persist, obtain medical treatment.

**Ingestion :** If swallowed, obtain medical treatment immediately.

## FIRE-FIGHTING MEASURES

(ANSI Section 5)

**Fire extinguishing media :** Dry chemical or foam water fog. Carbon dioxide. Closed containers may burst if exposed to extreme heat or fire. May decompose under fire conditions emitting irritant and/or toxic gases. In closed tanks, water or foam may cause frothing or eruption.

**Fire fighting procedures :** Water may be used to cool and protect exposed containers. Firefighters should use full protective clothing, eye protection, and self-contained breathing apparatus.

**Hazardous decomposition or combustion products :** Carbon monoxide, carbon dioxide, oxides of sulfur, toxic gases, acrylic monomers.

## ACCIDENTAL RELEASE MEASURES

(ANSI Section 6)

**Steps to be taken in case material is released or spilled :** Comply with all applicable health and environmental regulations. Eliminate all sources of ignition. Ventilate area. Evacuate all unnecessary personnel. Place collected material in proper container. Spilled material is extremely slippery. Complete personal protective equipment must be used during cleanup. Large spills - shut off leak if safe to do so. Dike and contain spill. Pump to storage or salvage vessels. Use absorbent to pick up excess residue. Keep salvageable material and rinse water out of sewers and water courses. Small spills - use absorbent to pick up residue and dispose of properly.

## HANDLING AND STORAGE

(ANSI Section 7)

**Handling and storage :** Store below 100°F (38°C). Keep away from heat, sparks and open flame. Keep from freezing. Keep container tightly closed in a well-ventilated area.

**Other precautions :** Use only with adequate ventilation. Do not take internally. Keep out of reach of children. Avoid contact with skin and eyes, and breathing of vapors. Wash hands thoroughly after handling, especially before eating or smoking. Keep containers tightly closed and upright when not in use. Avoid conditions which result in formation of inhalable particles such as spraying or abrading (sanding) painted surfaces. If such conditions cannot be avoided, use appropriate respiratory protection as directed under exposure controls/personal protection. Empty containers may contain hazardous residues.

## EXPOSURE CONTROLS/PERSONAL PROTECTION (ANSI Section 8)

**Respiratory protection :** Control environmental concentrations below applicable exposure standards when using this material. When respiratory protection is determined to be necessary, use a NIOSH/MSHA (Canadian z94.4) Approved elastomeric sealing- surface facepiece respirator outfitted with organic vapor cartridges and paint spray (dust/mist) prefilters. Determine the proper level of protection by conducting appropriate air monitoring. Consult 29CFR1910.134 For selection of respirators (Canadian z94.4).

**Ventilation :** Provide dilution ventilation or local exhaust to prevent build-up of vapors.

**Personal protective equipment :** Eye wash, safety shower, safety glasses or goggles. Impervious gloves, impervious clothing.

## STABILITY AND REACTIVITY

(ANSI Section 10)

**Under normal conditions :** Stable see section 5 fire fighting measures

**Materials to avoid :** Oxidizers, acids, Nitrates.

**Conditions to avoid :** Elevated temperatures, contact with oxidizing agent, freezing, sparks, open flame.

**Hazardous polymerization :** Will not occur

## TOXICOLOGICAL INFORMATION

(ANSI Section 11)

**Supplemental health information :** Contains a chemical that may be absorbed through skin. Notice - reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Other effects of overexposure may include toxicity to liver, kidney, lungs, blood.

**Carcinogenicity :** The international agency for research on cancer (IARC) has classified carbon black as possibly carcinogenic to humans (group 2b) based on sufficient evidence in animals and inadequate evidence in humans. In a lifetime inhalation study, exposure to 250 mg/m<sup>3</sup> titanium dioxide resulted in the development of lung tumors in rats. These tumors occurred only at dust levels that overwhelmed the animals' lung clearance mechanisms and were different from common human lung tumors in both type and location. The relevance of these findings to humans is unknown but questionable. The international agency for research on cancer (IARC) has classified titanium dioxide as possibly carcinogenic to humans (group 2b) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

**Reproductive effects :** No reproductive effects are anticipated

**Mutagenicity :** No mutagenic effects are anticipated

**Teratogenicity :** No teratogenic effects are anticipated

## ECOLOGICAL INFORMATION

(ANSI Section 12)

No ecological testing has been done by akzo nobel paints llc on this product as a whole.

The information contained herein is based on data available at the time of preparation of this data sheet which Akzo Nobel Paints believes to be reliable. However, no warranty is expressed or implied regarding the accuracy of this data. Akzo Nobel Paints shall not be responsible for the use of this information, or of any product, method or apparatus mentioned and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and the health and safety of your employees and the users of this material. Complies with OSHA hazard communication standard 29CFR1910.1200.

Akzo Nobel Paints

15885 Sprague Road Strongsville, Ohio 44136

EMERGENCY TELEPHONE NO. (800) 545-2643

DEVFLEX 4212 HP ACRYLIC EGGSHELL

4212

**DISPOSAL CONSIDERATIONS**

(ANSI Section 13)

Waste disposal : Dispose in accordance with all applicable regulations. Avoid discharge to natural waters.

**REGULATORY INFORMATION**

(ANSI Section 15)

As of the date of this MSDS, all of the components in this product are listed (or are otherwise exempt from listing) on the TSCA inventory. This product has been classified in accordance with the hazard criteria of the CPR (controlled products regulations) and the MSDS contains all the information required by the CPR.

**Physical Data**

(ANSI Sections 1, 9, and 14)

Product Code	Description	Wt. / Gal.	VOC gr. / ltr.	% Volatile by Volume	Flash Point	Boiling Range	HMS	DOT, proper shipping name
4212-0100	devflex 4212hp high performance waterborne acrylic eggshell enamel-white	10.80	98.04	64.18	none	212-453	310	paint ** protect from freezing **
4212-0200	devflex 4212hp high performance waterborne acrylic eggshell enamel-pastel tint base	10.43	99.49	65.61	none	212-453	310	paint ** protect from freezing **
4212-0300	devflex 4212hp high performance waterborne acrylic eggshell enamel-interm tint base	9.78	88.71	68.00	none	212-453	310	paint ** protect from freezing **
4212-0400	devflex 4212hp high performance waterborne acrylic eggshell enamel-deep tint base	8.96	99.64	69.41	none	212-501	310	paint ** protect from freezing **
4212-0500	devflex 4212hp high performance waterborne acrylic eggshell enamel-neutral tint base	8.97	92.10	71.20	none	212-453	310	paint ** protect from freezing **
4212-9990	devflex 4212hp high performance waterborne acrylic eggshell enamel-black	9.03	88.62	70.14	none	212-453	*310	paint ** protect from freezing **

**Ingredients**

Product Codes with % by Weight (ANSI Section 2)

Chemical Name	Common Name	CAS. No.	4212-0100	4212-0200	4212-0300	4212-0400	4212-0500	4212-9990
ethanol, 2-(2-butoxyethoxy)-	diethylene glycol monobutyl ether	112-34-5	1-5	1-5	1-5	1-5	1-5	1-5
9-octadecenoic acid (9Z)-, monoester with 1,2-propanediol	propylene glycol monooleate	1330-80-9			1-5	1-5	1-5	1-5
carbon black	carbon black	1333-86-4						1-5
titanium dioxide	titanium dioxide	13463-67-7	20-30	10-20	10-20	1-5		
propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol	texanol	25265-77-4				1-5		
ceramic materials and wares, chemicals	calcined kaolin clay	66402-68-4	5-10	5-10	5-10	5-10	5-10	5-10
water	water	7732-18-5	40-50	40-50	50-60	50-60	60-70	60-70
acrylic resin	acrylic resin	Sup. Conf.	10-20	10-20	20-30	20-30	20-30	20-30

**Chemical Hazard Data**

(ANSI Sections 2, 8, 11, and 15)

Common Name	CAS. No.	ACGIH-TLV				OSHA-PEL				S.R. Std.	S2	S3	CC						
		8-Hour TWA	STEL	C	S	8-Hour TWA	STEL	C	S					H	M	N	I	O	
diethylene glycol monobutyl ether	112-34-5	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	y	n	y	n	n	n	n	
propylene glycol monooleate	1330-80-9	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	
carbon black	1333-86-4	3.5 mg/m3	not est.	not est.	not est.	3.5 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	n	y	n	
titanium dioxide	13463-67-7	10 mg/m3	not est.	not est.	not est.	10 mg/m3	not est.	not est.	not est.	not est.	n	n	n	n	n	n	y	n	
texanol	25265-77-4	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	
calcined kaolin clay	66402-68-4	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	not est.	n	n	n	n	n	n	n	n	

**Footnotes:**

C=Ceiling - Concentration that should not be exceeded, even instantaneously.

S=Skin - Additional exposure, over and above airborne exposure, may result from skin absorption.

n/a=not applicable  
not est=not established  
CC=CERCLA Chemical

ppm=parts per million  
mg/m3=milligrams per cubic meter  
Sup Conf=Supplier Confidential

S2=Sara Section 302 EHS  
S3=Sara Section 313 Chemical  
S.R.Std.=Supplier Recommended Standard

H=Hazardous Air Pollutant, M=Marine Pollutant  
P=Pollutant, S=Severe Pollutant  
Carcinogenicity Listed By:  
N=NTP, I=IARC, O=OSHA, y=yes, n=no