an EnPro Industries company

Material Safety Data Sheet
Diamond-Hyde Paint

SECTION 1:	Identification of the Substance/mixture and of the Company/Undertaking
Product name:	Diamond-Hyde Paint
Code:	D14765
Specific uses:	Aqueous based, abrasion-resistant, chemical-resistant coating, which should be recommended when a highly lubricious nonstick surface is required.

SECTION 2:	Hazards Identification
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	CARCINOGENICITY - Category 1A
GHS label elements Hazard pictograms	
Signal word	Danger
Hazard statements	May cause cancer.

Precautionary statements

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Response	IF exposed or concerned: Get medical attention.
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known

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Phone: 303-988-1242, Fax: 303-988-1922

SECTION 3: Composition/Information on Ingredients

Substance/mixture Mixture

Ingredient name	% by weight	CAS number
propane-1,2-diol	5 - 10	57-55-6
Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-	1 - 5	9036-19-5
nickel monoxide	0.1 - 1	1313-99-1

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First Aid Measures

Description of necessary first aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation: No known significant effects or critical hazards.

Skin contact: No known significant effects or critical hazards.

Eye contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation: No specific data.

Skin contact: No specific data.

Eye contact: No specific data.

Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Exposure, in sufficient quantities, to the thermal decomposition vapors of fluorinated polymers may cause "polymer fume fever" with flu-like symptoms in humans. The symptoms of "polymer fume fever" are chills /

	fever / chest pains / shortness of breath / coughing. The symptoms usually pass in 48 to 72 hours and have no lasting or cumulative effect.
Specific treatments	No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting Measures

Extinguishing media

Suitable extinguishing Media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.

National Fire Protection Association (U.S.A.)

Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental Release Measure

Personal precautions, protective equipment and emergency procedures

For non-emergency Personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Spillage onto the outside of container will make the container slippery. Hazard of slipping on spilled product.

SECTION 7: Handling and Storage

Conditions for safe storage, including any incompatibilities	Store between the following temperatures: 5 to 30°C (41 to 86°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering

eating areas. Contamination of tobacco products must be avoided. Polymer Fume fever is particularly associated with the smoking of contaminated tobacco products. See also Section 8 for additional information on hygiene measures.

SECTION 8: Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits

Ingredient name	CAS #	Exposure limits
propane-1,2-diol	57-55-6	**AIHA WEEL (United States, 10/2011).** TWA: 10 mg/m³ 8 hours.
nickel monoxide	1313-99-1	**OSHA PEL 1989 (United States, 3/1989).** TWA: 1 mg/m³, (as Ni) 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 0.015 mg/m³, (as Ni) 10 hours. **ACGIH TLV (United States, 4/2014).** TWA: 0.2 mg/m³, (as Ni) 8 hours. Form: Inhalable fraction **OSHA PEL (United States, 2/2013).** TWA: 1 mg/m³, (as Ni) 8 hours.

Appropriate engineering controls: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental Exposure Control: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

SECTION 9: Physical and Chemical Properties

Physical state	Liquid.
Color	Tan. [Dark]
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	>100°C (>212°F)
Flash point	Closed cup: 94°C (201.2°F)
Evaporation rate	<1 (ether (anhydrous) = 1)
Flammability (solid, gas)	Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
Lower and upper explosive (flammable) limits	Lower: 1.3%
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.237
Solubility	Not available
Section 9. Physical and chemical properties	
Solubility in water	Not available.
Auto-ignition Temperature	Not available.
Decomposition temperature	330°C (626°F)
Viscosity	Not available.

SECTION 10: Stability and Reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous	Under normal conditions of storage and use, hazardous reactions will not occur. reactions
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition Products	The fluoropolymer resins used in this coating begin to decompose, very slowly, at temperatures above 625°F (330°C). Thermal decomposition is more rapid at temperatures above 750°F (400°C). Above 800°F (425°C)

fluoropolymer resins give off small amounts of tetrafluoroethylene / hexafluoropropylene / perisofluorobutylene / carbonyl fluoride / hydrogen fluoride. These are toxic and if inhaled, in sufficient quantities, may be harmful. The actual decomposition products depend on temperature and the amount of oxygen.

SECTION 11: Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propane-1,2-diol	LD50 Dermal LD50 Oral	Rabbit Rat	20800 mg/kg 20 g/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
propane-1,2-diol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100	
milligrams	-				
	Skin - Moderate irritant	Child	-	96 hours 30	-
				Percent	
	Skin - Mild irritant	Human	-	168 hours	-
				500	
milligrams					
	Skin - Moderate irritant	Human	-	72 hours 104	-
				Intermittent	
	Skin - Mild irritant	Woman	-	96 hours 30	-
				Percent	
Poly(oxy-1,2-ethanediyl), α-,1,3,3-tetramethylbutyl)phenyl	Eyes - Mild irritant	Rabbit	-	15 milligrams	-

Sensitization: No specific data.

Mutagenicity: No specific data.

Carcinogenicity: No specific data.

Conclusion/Summary: : IARC classifies TiO2 as a 2B carcinogen based in large part on several studies of the effects of the inhalation of TiO2 on animals in which the TiO2 particles were of various sizes. Particles defined as “ultrafine” have been shown to cause cancer in animals exposed to very high concentrations. A number of authorities have reviewed those studies and others involving exposure to ultrafine particles and have concluded that the effects result from overloading the respiratory system of the animals. The effects observed, according to the scientists, are not due to TiO2 but are general responses to high levels of dust in the lungs. In addition, a carcinogenic effect of TiO2 dust in the workers was not observed in several epidemiology studies on more than 20,000 TiO2 industry workers in Europe and the USA, nor were other chronic diseases, including other respiratory diseases, associated with exposure to TiO2 dust. Accordingly, we have concluded that our products should not be classified on the basis of the presence of TiO2 in the products.

Classification

Product/ingredient name	OSHA	IARC	NTP
nickel monoxide	-	1	Known to be a human carcinogen.

Reproductive toxicity: No specific data.

Teratogenicity: No specific data.

Specific target organ toxicity (single exposure)	No specific data.
Specific target organ toxicity (repeated exposure)	No specific data.
Aspiration hazard	No specific data.
Information on the likely routes of exposure	Not available.

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

No specific data.

General	No known significant effects or critical hazards.
Carcinogenicity	May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	38932 mg/kg

SECTION 12: Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
propane-1,2-diol	Acute EC50 110 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000 mg/l Marine water	Crustaceans - Chaetogammarus marinus - Young	48 hours
	Acute LC50 710000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-	Acute LC50 10800 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 8600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

No specific data.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
propane-1,2-diol	-0.92	-	low
nickel monoxide	-	5613	high

Mobility in soil

Soil/water partition coefficient (KOC) — Not available.

Other adverse effects — No known significant effects or critical hazards

SECTION 13: Disposal Considerations

Disposal methods — The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification — Not applicable.

SECTION 14: Transport Information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN Number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	-	-	-	-	-

Special precautions for User

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory Information

U.S. Federal regulations

TSCA 4(a) final test rules: 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

TSCA 5(a)2 final significant new use rules: 2-methoxyethanol

TSCA 8(a) PAIR: 1,4-dichlorobenzene; Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-; naphthalene; 4-Nonylphenol, branched, ethoxylated ; Siloxanes and Silicones, di-Me, reaction products with silica

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

TSCA 12(b) one-time export: Ethene, 1,1,2,2-tetrafluoro-, homopolymer

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: 1,4-dichlorobenzene; naphthalene; diantimony pentoxide; nickel monoxide

Clean Water Act (CWA) 311: 1,4-dichlorobenzene; naphthalene; ammonium benzoate; ammonia; ethylenediamine

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) Listed

Clean Air Act Section 602 Class I Substances Not listed

Clean Air Act Section 602 Class II Substances Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ (lbs)	SARA 302 TPQ (gallons)	SARA 304 RQ (lbs)	SARA 304 RQ (gallons)
ethylenediamine	0 - 0.1	Yes.	10000	1334.1	5000	667
ethylene oxide	0 - 0.1	Yes.	1000	-	10	-

SARA 304 RQ 94609975.1 lbs / 42952928.7 kg [9172969.5 gal / 34723467

L] SARA 311/312

Classification Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
propane-1,2-diol	5 - 10	No.	No.	No.	Yes.	No.
Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-	1 - 5	No.	No.	No.	Yes.	No.
nickel monoxide	0.1 - 1	No.	No.	No.	No.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ethanediol	107-21-1	1 - 5
	nickel monoxide	1313-99-1	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts The following components are listed: TITANIUM DIOXIDE; TIN DIOXIDE DUST; ETHYLENE GLYCOL

New York The following components are listed: Ethylene glycol

New Jersey The following components are listed: PROPYLENE GLYCOL; 1,2-PROPANEDIOL; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO2); NICKEL OXIDE; NICKEL MONOXIDE; ETHYLENE GLYCOL; 1,2-ETHANEDIOL

Pennsylvania The following components are listed: 1,2-PROPANEDIOL; TITANIUM OXIDE; NICKEL OXIDE (NIO); 1,2-ETHANEDIOL; ETHENE, TETRAFLUORO-, HOMOPOLYMER

Minnesota Hazardous Substances None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
titanium dioxide	Yes.	No.	No.	No.
ethanediol	No.	Yes.	No.	No.
nickel monoxide	Yes.	No.	No.	No.
carbon black respirable	Yes.	No.	No.	No.
2-methoxyethanol	No.	Yes.	No.	63 µg/day (ingestion)
crystalline silica non-respirable	Yes.	No.	No.	No.
1,4-dichlorobenzene	Yes.	No.	Yes.	No.
1,4-dioxane	Yes.	No.	Yes.	No.
ethylene oxide	Yes.	Yes.	Yes.	Yes.
naphthalene	Yes.	No.	Yes.	No.

Canada inventory At least one component is not listed in DSL but all such components are listed in NDSL.

International regulations

International lists

Australia inventory (AICS):	All components are listed or exempted.
China inventory (IECSC):	All components are listed or exempted.
Japan inventory:	Not determined.
Korea inventory:	All components are listed or exempted.
Malaysia Inventory (EHS Register):	Not determined.
New Zealand Inventory of Chemicals (NZIoC):	Not determined.
Philippines inventory (PICCS):	Not determined.
Taiwan inventory (CSNN):	Not determined.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

SECTION 16: Other Information

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships,
1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References: Not available.

Indicates information that has changed from previously issued version.