Material Safety Data Sheet

Date of issue 24 July 2014
Version 20

1 . Product and company identification

Product name : CHEMFOS 700HNR

Code : CF700HNR

Supplier : Pretreatment and Specialty Products
23000 St. Clair Avenue
Euclid, OH 44117

Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

Technical Phone Number : 1-800-627-6015 (PPG PRETREATMENT & SPECIALTY PRODUCTS)
8:00 a.m. - 5:00 p.m. EST

2 . Hazards identification

Emergency overview : DANGER!

OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES EYE AND SKIN BURNS. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. Add this product only to water. Never add water to this product.

Keep away from combustible material. Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat. May cause sensitization by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May be harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin : Corrosive to the skin. Causes burns. May cause an allergic skin reaction.

Eyes : Corrosive to eyes. Causes burns.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Ingestion : Adverse symptoms may include the following:
stomach pains

Skin : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Eyes : Adverse symptoms may include the following:
pain
watering
redness

2 . Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
zinc bis(dihydrogen phosphate)	13598-37-3	10 - 30
Phosphoric acid, solution	7664-38-2	5 - 10
zinc nitrate	7779-88-6	5 - 10
manganese bis(dihydrogen phosphate)	18718-07-5	3 - 7
nickel dinitrate	13138-45-9	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Flammability of the product : Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion. In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

5 . Fire-fighting measures

Hazardous combustion products : Decomposition products may include the following materials:
nitrogen oxides
phosphorus oxides
metal oxide/oxides

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.

6 . Accidental release measures

Personal precautions : 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

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). Water polluting material. May be harmful to the environment if released in large quantities.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. 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). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. 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.

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Keep away from combustible material. Add this product only to water. Never add water to this product. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : 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. Separate from alkalis. Separate from reducing agents and combustible materials. See NFPA 430, Code for the Storage of Liquid and Solid Oxidizers. 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.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG
Phosphoric acid, solution	TWA	1 mg/m³	1 mg/m³	1 mg/m³	1 mg/m³	Not established
	STEL	3 mg/m³	Not established	3 mg/m³	3 mg/m³	Not established
manganese bis(dihydrogen phosphate)	TWA	0.02 mg/m³ (as Mn) R 0.1 mg/m³ (as Mn)	Not established	0.2 mg/m³ (as Mn)	0.2 mg/m³ (as Mn)	Not established
	STEL	Not established	5 mg/m³ (as Mn) C	Not established	Not established	Not established
nickel dinitrate	TWA	0.1 mg/m³ (as Ni) 0.1 MG/M3 TD	1 mg/m³ (as Ni) 0.1 mg/m3 (as Ni)	0.1 mg/m³ (as Ni)	0.1 mg/m³ (as Ni)	Not established
	STEL	Not established	Not established	Not established	0.3 mg/m³ (as Ni)	Not established

Key to abbreviations

A	=	Acceptable Maximum Peak	S	=	Potential skin absorption
ACGIH	=	American Conference of Governmental Industrial Hygienists.	SR	=	Respiratory sensitization
C	=	Ceiling Limit	SS	=	Skin sensitization
F	=	Fume	STEL	=	Short term Exposure limit values
IPEL	=	Internal Permissible Exposure Limit	TD	=	Total dust
OSHA	=	Occupational Safety and Health Administration.	TLV	=	Threshold Limit Value
R	=	Respirable	TWA	=	Time Weighted Average
Z	=	OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances			

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Chemical splash goggles and face shield.

Hands : 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.

Gloves : nitrile, neoprene

8 . Exposure controls/personal protection

Respiratory : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. 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 : 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.

Environmental exposure controls : 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.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: Not applicable.

Color : Not available.

Odor : Not available.

pH : 1.5

Boiling/condensation point : >37.78°C (>100°F)

Melting/freezing point : Not available.

Specific gravity : 1.5

Density (lbs / gal) : 12.52

Vapor pressure : 2.3 kPa (17.5 mm Hg) [room temperature]

Vapor density : Not available.

Volatility : 69% (v/v), 48.82% (w/w)

Evaporation rate : 0.36 (butyl acetate = 1)

Partition coefficient: n-octanol/water : Not available.

% Solid. (w/w) : 51.18

10 . Stability and reactivity

Stability : The product may not be stable under certain conditions of storage or use.

Conditions to avoid : Drying on clothing or other combustible materials may cause fire. Avoid increased storage temperature. Pressure hazard

Materials to avoid : Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.,Reactive or incompatible with the following materials:, combustible materials,organic materials,metals,acids,alkalis,oxidizing materials,reducing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
zinc bis(dihydrogen phosphate)	LD50 Oral	Rat	1990 mg/kg	-
Phosphoric acid, solution	LD50 Oral	Rat	1.25 g/kg	-
	LD50 Dermal	Rabbit	2.74 g/kg	-
nickel dinitrate	LD50 Oral	Rat	1018 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Target organs : Contains material which causes damage to the following organs: lungs, brain. Contains material which may cause damage to the following organs: blood, kidneys, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/ sinuses.

Carcinogenicity

Carcinogenicity : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
zinc nitrate	-	2A	-	-
manganese bis(dihydrogen phosphate)	A4	-	-	-
nickel dinitrate	A4	1	Known to be a human carcinogen.	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

Mutagenicity

Teratogenicity

Fertility effects : Contains material which may impair male fertility, based on animal data.

12 . Ecological information

Environmental effects : Water polluting material. May be harmful to the environment if released in large quantities.

13 . Disposal considerations

Waste disposal : 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

13 . Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	TDG	Mexico	IMDG
UN number	UN3264	UN3264	UN3264	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, solution)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, solution)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, solution)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid, solution)
Transport hazard class(es)	8	8	8	8
Packing group	II	II	II	II
Environmental hazards	No.	Yes.	No.	Yes.
Marine pollutant substances	Not applicable.	(zinc bis(dihydrogen phosphate), zinc nitrate)	Not applicable.	(zinc bis(dihydrogen phosphate), zinc nitrate)
Product RQ (lbs)	14084.5	Not applicable.	Not applicable.	Not applicable.
RQ substances	(zinc nitrate, ammonium bifluoride)	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

TDG : The marine pollutant mark is not required when transported by road or rail.

Mexico : None identified.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. The segregation group has been manually assigned based upon product analysis.

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.

15 . Regulatory information

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

Australia inventory (AICS) : At least one component is not listed.

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

China inventory (IECSC) : Not determined.

Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS) : At least one component is not listed.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand (NZIoC) : Not determined.

Philippines inventory (PICCS) : Not determined.

15 . Regulatory information

United States

U.S. Federal regulations :

SARA 302/304: nitric acid

CERCLA: Hazardous substances.: zinc bis(dihydrogen phosphate): No RQ is being assigned to the generic or broad class.; manganese bis(dihydrogen phosphate): No RQ is being assigned to the generic or broad class.; zinc nitrate: 1000 lbs. (454 kg); Phosphoric acid, solution: 5000 lbs. (2270 kg); ammonium bifluoride: 100 lbs. (45.4 kg); nitric acid: 1000 lbs. (454 kg); nickel dinitrate: No RQ is being assigned to the generic or broad class.;

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
zinc bis(dihydrogen phosphate)	13598-37-3	Y	N	N	N	N
Phosphoric acid, solution	7664-38-2	Y	N	N	Y	N
zinc nitrate	7779-88-6	Y	Y	N	Y	N
manganese bis(dihydrogen phosphate)	18718-07-5	Y	Y	N	N	N
nickel dinitrate	13138-45-9	Y	Y	N	Y	N
	Product as-supplied :	Y	Y	N	Y	N

SARA 313

Supplier notification :

Chemical name	CAS number	Concentration
zinc bis(dihydrogen phosphate)	13598-37-3	10 - 30
zinc nitrate	7779-88-6	5 - 10
manganese bis(dihydrogen phosphate)	18718-07-5	3 - 7
nickel dinitrate	13138-45-9	1 - 5

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Canada

WHMIS (Canada) : Class E: Corrosive liquid. Class C: Oxidizing material. Class D-1B: Material causing immediate and serious toxic effects (Toxic). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 0 **Health :** 3 **Reactivity :** 1

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 3 * **Flammability :** 0 **Physical hazards :** 1

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Health : 3 **Flammability :** 0 **Instability :** 1

Date of previous issue : 7/2/2014.

16 . Other information

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.