

SAFETY DATA SHEET



Date of issue/Date of revision 30 December 2014

Version 2

Section 1. Identification

Product name : CHEMFOS 146FD
Product code : CF146FD
Other means of identification : Not available.
Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Industrial applications.
Use of the substance/ mixture : Coating. Paints. Painting-related materials.
Uses advised against : Not applicable.

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

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 : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 12.3%

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Causes serious eye irritation.
Causes skin irritation.

Section 2. Hazards identification

Precautionary statements

Prevention	: Wear protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.
Response	: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Not applicable.
Disposal	: Not applicable.
Supplemental label elements	: Emits toxic fumes when heated.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Product name	: CHEMFOS 146FD

Ingredient name	%	CAS number
Ammonium dihydrogenorthophosphate	7 - 13	7722-76-1
Poly(oxy-1,2-ethanediyl), α -phosphono- ω -(methylphenoxy)-, potassium salt (1:2)	1 - 5	66057-30-5
2-(2-butoxyethoxy)ethanol	0.5 - 1.5	112-34-5
Phosphoric acid, solution	0.5 - 1.5	7664-38-2
Poly(oxy-1,2-ethanediyl), α -[(1,1,3,3-tetramethylbutyl)phenyl]- ω -hydroxy-	0.5 - 1.5	9036-19-5

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

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

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 Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Description of necessary first aid measures

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.
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.
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.

Section 4. First aid measures

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

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

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

- 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.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting 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. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides
metal oxide/oxides

Section 5. Fire-fighting measures

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 measures

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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.

Section 7. Handling and storage

- Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors.
- 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. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : 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. 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. Do not store above the following temperature: 120F / 49C.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
(2-butoxyethoxy)ethanol	ACGIH TLV (United States, 4/2014). TWA: 10 ppm 8 hours. Form: Inhalable fraction and vapor
Phosphoric acid, solution	ACGIH TLV (United States, 4/2014). STEL: 3 mg/m ³ 15 minutes. TWA: 1 mg/m ³ 8 hours. OSHA PEL (United States, 2/2013). TWA: 1 mg/m ³ 8 hours.

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.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Section 8. Exposure controls/personal protection

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.

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.

Eye/face protection : Chemical splash goggles.

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.

Respiratory protection : 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. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : 2.9

Melting point : Not available.

Boiling point : >37.78°C (>100°F)

Flash point : Closed cup: Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Section 9. Physical and chemical properties

Evaporation rate	: 0.36 (butyl acetate = 1)
Vapor pressure	: 2.3 kPa (17.5 mm Hg) [room temperature]
Vapor density	: Not available.
Relative density	: 1.1
Density (lbs / gal)	: 9.18
Solubility	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.
Viscosity	: Kinematic (40°C (104°F)): >0.21 cm ² /s (>21 cSt)
Volatility	: 87% (v/v), 80.03% (w/w)
% Solid. (w/w)	: 19.97

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 reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-(2-butoxyethoxy)ethanol	LD50 Dermal	Rabbit	2700 mg/kg	-
	LD50 Oral	Rat	4500 mg/kg	-
Phosphoric acid, solution	LD50 Dermal	Rabbit	2.74 g/kg	-
	LD50 Oral	Rat	1.25 g/kg	-
Poly(oxy-1,2-ethanediyl), α-[(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-	LD50 Oral	Rat	3.5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Section 11. Toxicological information

Conclusion/Summary

- Skin** : There are no data available on the mixture itself.
Eyes : There are no data available on the mixture itself.
Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

- Skin** : There are no data available on the mixture itself.
Respiratory : There are no data available on the mixture itself.

Mutagenicity

- Conclusion/Summary** : There are no data available on the mixture itself.

Carcinogenicity

- Conclusion/Summary** : There are no data available on the mixture itself.

Reproductive toxicity

- Conclusion/Summary** : There are no data available on the mixture itself.

Teratogenicity

- Conclusion/Summary** : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Target organs

- : Contains material which may cause damage to the following organs: blood, lungs, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

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

Section 11. Toxicological information

Conclusion/Summary : There are no data available on the mixture itself. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Short term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Long term exposure

Potential immediate effects : There are no data available on the mixture itself.

Potential delayed effects : There are no data available on the mixture itself.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

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	10022.3 mg/kg
Dermal	80085.8 mg/kg

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2-(2-butoxyethoxy)ethanol	0.56	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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.

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

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	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class (es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.

Additional information

DOT : None identified.

IMDG : None identified.

IATA : None identified.

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

- United States inventory (TSCA 8b)** : All components are listed or exempted.
- Australia inventory (AICS)** : All components are listed or exempted.
- Canada inventory (DSL)** : All components are listed or exempted.
- China inventory (IECSC)** : All components are listed or exempted.
- 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)** : All components are listed or exempted.
- Philippines inventory (PICCS)** : At least one component is not listed.

United States

U.S. Federal regulations :

SARA 302/304

SARA 304 RQ : 197530.9 lbs / 89679 kg [21532.2 gal / 81508.1 L]

Composition/information on ingredients

Name	EHS	SARA 302 TPQ		SARA 304 RQ	
		(lbs)	(gallons)	(lbs)	(gallons)
Nitric acid	Yes.	1000	85.7	1000	85.7

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Ammonium dihydrogenorthophosphate	No.	No.	No.	Yes.	No.
Poly(oxy-1,2-ethanediyl), α -phosphono- ω -(methylphenoxy)-, potassium salt (1:2)	Yes.	No.	No.	Yes.	No.
2-(2-butoxyethoxy)ethanol	Yes.	No.	No.	Yes.	No.
Phosphoric acid, solution	No.	No.	No.	Yes.	No.
Poly(oxy-1,2-ethanediyl), α -[(1,1,3,3-tetramethylbutyl)phenyl]- ω -hydroxy-	No.	No.	No.	Yes.	No.

SARA 313

Supplier notification	Chemical name	CAS number	Concentration
	Ammonium dihydrogenorthophosphate	7722-76-1	7 - 13
	2-(2-butoxyethoxy)ethanol	112-34-5	0.5 - 1.5

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.

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

Product code CF146FD

Date of issue 30 December 2014 **Version** 2

Product name CHEMFOS 146FD

Section 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 : 9/20/2014.

Organization that prepared the MSDS : EHS

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

✔ 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.