




## SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
Trade Name:	Biofos®
Chemical Name:	Monocalcium Phosphate
CAS Number:	10031-30-8
Chemical Family:	Inorganic Salt
Synonyms:	MCP Calcium Phosphate Monobasic Monocalcium Phosphate Monocalcium Diphosphate Monocalcium Phosphate Calcium bis(dihydrogen phosphate) Calcium Phosphate Monobasic Monohydrate Biofos® Coarse
Primary Use:	Animal Feed ingredient. This product is not intended for direct consumption, but as part of a formulation.
Company Information:	THE MOSAIC COMPANY 3033 Campus Drive Plymouth, MN 55441 www.mosaicco.com 800-918-8270 or 763-577-2700 8 AM to 5 PM Central Time US
Emergency Telephone:	<b>EMERGENCY OVERVIEW</b> <b>24 Hour Emergency Telephone Number:</b> <b><u>For Chemical Emergencies:</u></b> <b>Spill, Leak, Fire or Accident</b> <b>Call CHEMTREC</b> <b>North America: (800) 424-9300 (reference CCN201871)</b> <b>Others: (703) 527-3887 (collect)</b>

SECTION 2	HAZARD IDENTIFICATION	
GHS Classification:	Skin Irritant Category 2 Eye Irritant Category 2B STOT SE Category 3	Hazard Statement H315 Hazard Statement H320 Hazard Statement H335
	<b>Signal Word: WARNING</b> <b>Hazard Statement(s)</b> H315: Causes skin irritation H320: Causes eye irritation H335: May cause respiratory irritation	
Label Elements:		
Prevention:	P264: Wash thoroughly after handling. P280: Wear protective gloves P261: Avoid breathing dust P271: Use only outdoors or in a well-ventilated area.	
Response:	P302+ P352	IF ON SKIN: Wash with plenty of water.
	P321	Specific Treatment, see supplemental first aid information.
	P332+ P313	If skin irritation occurs: Get medical advice/attention.



	P362+ P364	Take off contaminated clothing and wash it before reused.
	P305+P351+ P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337+ P313	If eye irritation persists: Get medical advice/attention.
	P304+ P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Storage:	Not applicable	Not applicable
Disposal:	P501	Disposal of content/containers to be in accordance with local/regional/national regulations.

SECTION 3		COMPOSITION INFORMATION ON INGREDIENTS			
Formula:	H <sub>4</sub> CaO <sub>8</sub> P <sub>2</sub> · H <sub>2</sub> O				
Composition:	Monocalcium Phosphate - Monohydrate	CAS 10031-30-8	70-75%	Skin Irritant Category 2 Eye Irritant Category 2B STOT SE 3 (Lungs, Inhalation)	
	Dicalcium Phosphate Dihydrate	CAS 7789-77-7	20-25%		
	Iron Phosphate	CAS 31096-47-6	2-4%		
	Calcium Sulfate Dihydrate	CAS 10101-41-4	0.5-1.0%		
	Calcium Carbonates	CAS 1317-65-3	0.5-1.0%		

SECTION 4		FIRST AID MEASURES	
First Aid Procedures:	Eyes:	Move victim away from exposure and into fresh air. Flush eyes with plenty of clean water for at least 15 minutes. If symptoms persist, seek medical attention.	
	Skin:	Wash contaminated area thoroughly with mild soap and water. If chemical or solution soaks through clothing, remove clothing and wash contaminated skin. If irritation develops and persists after washing, seek medical attention.	
	Inhaled:	If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.	
	Ingestion:	If large amounts are swallowed, seek emergency medical attention. If possible, do not leave victim unattended and observe closely for adequacy of breathing.	
Note to Physician:	None known.		

SECTION 5		FIRE FIGHTING MEASURES	
Extinguishing Media:	Use extinguishing agent suitable for type of surrounding fire. Avoid excessive water to minimize runoff.		
Protection of Firefighters:	Positive pressure, self-contained breathing apparatus is required for all firefighting activities involving hazardous materials. Full structural firefighting (bunker) gear is the minimum acceptable attire. The need for proximity, entry, flashover and/or special chemical protective clothing (see Section 8) needs to be determined for each incident by a competent firefighting safety professional.		
	Water used for fire suppression and cooling may become contaminated. Discharge to sewer system(s) or the environment may be restricted, requiring containment and proper disposal of water.		



<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
Response Techniques:	Stay upwind and away from spill (dust hazard). Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Notify appropriate federal, state, and local agencies as may be required (see Section 15). Minimize dust generation. Sweep up and package appropriately for disposal.

<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
Handling:	The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 3 and 8). Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practices.
Storage:	Keep container(s) tightly closed. Use and store this material in dry, well ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>	
Engineering Controls:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.	
Personal Protective Equipment (PPE):	Eye/Face:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.
	Skin:	The use of cloth or leather work gloves is advised to prevent skin contact; possible irritation and absorption (see glove manufacturing literature for information on permeability).
	Respiratory:	A NIOSH approved air purifying respirator with a type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed if workplace conditions warrant a respirator.
	Other:	A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.
General Hygiene Considerations:	Wash thoroughly after handling Wash contaminated clothing Use adequate ventilation Use good personal hygiene practice	
Exposure Guidelines:	OSHA Permissible Exposure Limits (PEL):	Particulates Not Otherwise Regulated: 5 mg/m <sup>3</sup> TWA (respirable); 15 mg/m <sup>3</sup> TWA (total)



	ACGIH Threshold Limit Value (TLV):	Particulates Not Otherwise Specified: 3 mg/m <sup>3</sup> TWA (respirable); 10 mg/m <sup>3</sup> TWA (inhalable)
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<b>SECTION 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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Note: Unless otherwise stated, values in this section are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance:	Light gray granules	Vapor Pressure (mm Hg):	Not applicable
Odor:	Slight	Vapor Density (air=1):	Not applicable
Odor Threshold:	No data available	Specific Gravity or Relative Density:	Not applicable
Physical state:	Solid granules	Bulk Density:	Loose 57 – 59 lbs/ft <sup>3</sup> ( 913– 945 kg/m <sup>3</sup> )
pH:	3.6 (in a 1% solution)	Solubility in Water:	60-70% soluble in a 1% solution
Melting Point/ Freezing Point:	Not applicable	Partition coefficient:	No data available
Boiling Point:	Not applicable	Auto-Ignition Temperature:	Not applicable
Flash Point:	Not applicable	Decomposition Temperature:	No data available
Evaporation Rate:	No data available	Viscosity:	No data available
Flammability:	Not applicable	Volatility:	Not applicable
Upper/lower Flammability or explosive limits	Not applicable		

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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Chemical Stability:	Stable under normal conditions of storage and handling; decomposes at approx. 200° C.
Conditions to Avoid:	None known.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Combustion can yield phosphorus oxides when heated at very high temperatures.
Corrosiveness:	No data.
Hazardous Polymerization:	Will not occur.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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Substance:	Monocalcium Phosphate Monohydrate
Acute Oral Toxicity:	See Section 15 under Food and Drug Administration (FDA) notes LD <sub>50</sub> (rat, oral) = 17500 mg/kg LD <sub>50</sub> (mouse, oral) = 15250 mg/kg
Acute Inhalation Toxicity:	No data available
Acute Dermal Toxicity:	LD <sub>50</sub> (rabbit, dermal) > 300 mg/kg See TOXNET
Substance:	Dicalcium Phosphate Dihydrate
Acute Oral Toxicity:	No data available
Acute Inhalation Toxicity:	No data available



Acute Dermal Toxicity:	No data available		
Mutagenesis:	No data available	Target Organ	STOT SE 3 (Lungs, Inhalation)
Developmental Toxicity:	No data available	Carcinogenicity	The ingredients of this product are not classified as carcinogenic by NTP (National Toxicology Program), IARC, or OSHA

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
Ecotoxicology:	May release phosphates which will result in algae growth, increased turbidity, and depleted oxygen (primarily fresh and coastal water systems). At extremely high concentrations, this may be hazardous to fish or other marine organisms. Release to watercourses may cause effects downstream.

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
	Properly characterize all waste materials. Consult federal, state/provincial and local regulations regarding the proper disposal of this material. Prevent material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways.

<b>SECTION 14</b>	<b>TRANSPORT INFO</b>
Regulatory Status:	Not regulated
Identification Number:	HTS 2835.26.00
Hazard Class:	Not applicable
Proper Shipping Name	Not applicable
Packing Group	Not applicable
DOT Emergency Response Guide Number:	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable
MARPOL Annex V:	Non-HME
IMO/IMDG:	Not applicable


<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>		
FDA:	Calcium phosphate (mono-, di-, and tribasic) used as a general purpose food additive in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. /Calcium phosphate (mono-, di-, and tribasic)/[21 CFR 582.1217 (4/1/90)]		
CERCLA:	Not listed		
RCRA 261.33:	Not listed		
SARA TITLE III: (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or for	Section 302/304: Not listed	RQ: No	TPQ: No
	Section 311/312:		



quantities of less than 10,000 pounds on-site.)	Acute: Yes	Chronic: No	Fire: No	Pressure: No	Reactivity: No
	Section 313: Not listed				
NTP, IARC, OSHA:	This material has not been identified as a carcinogen by NTP, IARC, or OSHA.				
Canada DSL and NDSL:	DSL: Yes NDSL: Not listed This product is registered in Canada under the Feeds Act and is thus exempt from the New Substances Notification Requirements in the Canadian Environmental Protection Act (CEPA) per subsection 26(3).				
TSCA:	Listed on the TSCA Inventory				
WHMIS:	<b>WHMIS 2015</b> This SDS has been prepared according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR. <b>WHMIS 1988 (Repealed)</b> Classifications and/or symbols from the Controlled Products Regulations (CPR) are included in the Other Hazardous Classifications in Section 16 for reference.				
CBSA:	This product does not contain any bovine, ruminant or other animal by-products.				

SECTION 16	OTHER INFORMATION
Disclaimer:	<p>The information in this document is believed to be correct as of the date issued. <b>HOWEVER, MOSAIC MAKES NO GUARANTEE, REPRESENTATION, OR WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO THE USE OF THIS PRODUCT.</b></p> <p>User is responsible for determining whether this product is fit for a particular purpose and suitable for user's method of use or application and assumes the risk of use thereof. The conditions and use of this product are beyond the control of Mosaic, and Mosaic disclaims any liability for loss or damage incurred in connection with the use or misuse of this product. Each user should review the recommended industrial hygiene and safe handling procedures in the specific context of the intended use and determine whether they are appropriate.</p>
Preparation:	The preparation of this SDS was in accordance with ANSI Z400.1-2010.
Revision Date:	December 22, 2015
Sections Revised:	All
SDS Number:	MOS 100068
References:	Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – 4th Edition 2011 OSHA Hazard Communication Standard, 2012 MARPOL Annex V; TOXNET



Other Hazard Classifications:	<b>NFPA HAZARD CLASS</b>		<b>HMIS HAZARD CLASS</b>		<b>WHMIS 1988 (CPR) HAZARD CLASS</b>	
	Health:	2	Health:	2	Symbol	N/A
	Flammability:	0	Flammability:	0	Classification	Not WHMIS Controlled
	Instability:	0	Physical Hazard:	0	Sub Class	N/A
	Special Hazard:	None	PPE:	Section 8		
	<b>WHMIS 2015 (HPR) HAZARD CLASS</b>					
	Signal Word	Warning				
	Symbol					
	Classification	Skin Irritant Category 2 Eye Irritant Category 2B STOT SE Category 3				
	Hazard Statements	H315: Causes skin irritation H320: Causes eye irritation H335: May cause respiratory irritation				