



# Safety Data Sheet according to OSHA-GHS (29 CFR part 1910.1200 HCS 2012)

**PRODUCT NAME** UREA PHOSPHATE

Product Code 020/04-US/2163

Date of issue July 2013

Supersedes

March 2011

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product identifier** Urea phosphate

**Recommended uses:**

Industrial use of urea phosphate for formulation of preparations and end-use in industrial settings, including distribution and other activities related to the processes in industrial settings.

Professional use of urea phosphate in fertilizers.

Consumer end-use of fertilizers containing urea phosphate.

**Restrictions on uses:** None

**Supplier** SQM North America  
2727 Paces Ferry Rd, Bldg Two, Suite 1425  
Atlanta, GA 30339

**Company Telephone/Fax** 770.916.9400 / 770.916.9404

**Emergency Telephone Number** (800) 424 9300 (CHEMTREC)

## 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

Classification of the chemical in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories	Hazard statements
Skin Corr. 1B	Causes severe skin burns and eye damage.
Serious Eye Damage Cat. 1	Causes serious eye damage

**Label elements**

**Hazard pictograms**



**Signal word**

Danger

**Hazard Statements**

Causes severe skin burns and eye damage

**Precautionary Statements**

Do not breathe dust/fumes.

Wear protective gloves/protective clothing/eye protection/face protection.

Wash hands and face thoroughly after handling.

IF SWALLOWED: Rinse mouth with water. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a POISON CENTER or doctor/physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Store locked up

Dispose of contents/container according to local/state/federal regulations.

**Other hazards**

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No	EC No	% by Wt.
Urea phosphate	4861-19-2	225-464-3	>97.9%
(additional identifier)	( 4401-74-5)	(224-534-0)	

## 4. FIRST AID MEASURES

**Description of first aid measures**

**General information**

In case of persisting adverse effects consult a physician.

Never give anything by mouth to an unconscious person or a person with cramps.



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**In case of inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
Immediately call a POISON CENTER or doctor/physician.

**In case of skin (or hair) contact**

Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Wash contaminated clothing before reuse.  
Immediately call a POISON CENTER or doctor/physician.

**In case of eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.

**In case of ingestion**

Rinse mouth and drink plenty of water. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

**Most important symptoms and effects, both acute and delayed**

The following symptoms may occur:

- |                         |   |
|-------------------------|---|
| In case of inhalation   | May be corrosive/irritant to the respiratory tract  |
| In case of skin contact | Causes severe skin burns  |
| In case of eye contact  | Causes severe eye damage (burns)  |
| In case of ingestion    | The substance is corrosive to mucous membranes, acute effects are related to this property. |

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**5. FIRE FIGHTING MEASURES**

**Extinguishing media**

- |                               |   |
|-------------------------------|---|
| Suitable extinguishing media: | Use any viable mean for extinguishing surrounding fire.                                 |
| Unsuitable material:          | None, but attention should be paid to compatibility with chemicals in surrounding area. |

**Specific hazards arising from the chemical**

Thermal decomposition can lead to the escape of toxic/irritating gases and vapours.  
Thermal decomposition products: Carbon monoxide, carbon dioxide, nitrogen oxides, ammonia.

**Protective equipment and precautions for firefighters**

Firefighters should wear a self-contained breathing apparatus and chemical protective clothing.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Provide adequate ventilation. Avoid breathing dust. Avoid substance contact. Wear personal protection equipment.

**Environmental precautions**

Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

**Methods and material for containment and cleaning up**

Take up mechanically, placing in appropriate containers for disposal or recovery.  
Unsuitable material for taking up: None specified

**Other information**

No further measures are required.

**7. HANDLING AND STORAGE**

**Precautions for Safe Handling**

Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment. Avoid contact with skin and eyes.  
Do not breathe dust. Wash hands and face thoroughly after handling, before breaks and at the end of workday.  
Do not eat, drink or smoke when using this product.  
Keep away from food, drink and animal feeding stuff. Good hygiene practices and housekeeping measures.  
Incompatible with bases due to acid behavior when dissolved in water.

**Conditions for safe storage, including any incompatibilities**

Reseal carefully any opened container and set upright to avoid leakages.  
Keep/store only in original container. Keep the product tightly closed in a dry, in well-ventilated and cool place.  
Do not store together with: Strong oxidizing agents, reducing agents, bases.



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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

**Occupational exposure limits**

Urea phosphate

OSHA	PEL (8-h)	Not Established	
	STEL/ceiling	Not Established	
ACGIH	TWA	Not Established	(2012 TLVs® and BEIs®)
	STEL/ceiling	Not Established	(2012 TLVs® and BEIs®)

**Derived No-Effect Level (DNEL) suggested by the manufacturer**

Workers (industrial/professional):	
DNEL Human, inhalation, long term (repeated)*:	2.92 mg/m <sup>3</sup> /day

Derived No-Effect Level (DNEL) is the level of exposure to the substance above which humans should not be exposed.

\*Urea phosphate occupational exposure limit, recommended by the manufacturer

**Engineering controls**

Use local exhaust ventilation to keep airborne concentrations below exposure limits.

**Personal Protective Equipment**

**Eye/face protection**

Tightly sealed safety goggles. Face protection if exposure is likely to occur.

**Skin Protection**

Nitrile rubber gloves, over 0.11 mm thickness, > 480 min breakthrough time. Skin coverage with appropriate barrier material based on potential for contact with the chemical.

**Respiratory Protection**

Wear respiratory protection, where airborne concentrations are expected to exceed exposure limits.

**General Hygiene Considerations**

Avoid contact with eyes and skin. Do not breathe dust. Wash hands and face thoroughly after handling. Take off immediately all contaminated clothing. Do not eat, drink or smoke when using this product. Provide an eye wash bath and emergency shower.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

Appearance	White crystalline powder	
Colour	White	
Odour	Odorless	
Odour Threshold	Not applicable	
pH value	2.75 (0.05% aqueous solution)	
Melting point / freezing range	>392 °F (>200 °C at 1013 hPa)	(EU A.1/OECD Guideline 102)
Boiling temperature / boiling range	>392 °F (>200 °C at 1013 hPa)	(EU A.2/OECD Guideline 103)
Flash point	Not applicable	
Vapourisation rate / Evaporation rate	Not applicable	
Flammable solids	Non flammable	(Based on chemical structure)
Explosion limits (LEL, UEL)	Not applicable	
Vapour pressure	< 1.10E <sup>-3</sup> Pa at 68 °F (20 °C)	(EU A.4/OECD Guideline 104)
Vapour density	No data available	
Density	1.77 g/cm <sup>3</sup> at 68 °F (20 °C)	(EU A.3/OECD Guideline 109)
Solubility	> 100 g/L at 68 °F (20 °C) (water)	(Based on chemical structure)
Partition coefficient n-octanol /water	-1.73 at 68 °F/20 °C (urea)	
Auto Ignition temperature (AIT)	Not applicable	
Decomposition temperature	Not available	
Viscosity	Not applicable	
Explosive properties	Not explosive	(Based on chemical structure)
Oxidizing properties	Not oxidizing	(Based on chemical structure)

**Other information**

None



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**10. STABILITY AND REACTIVITY**

**Reactivity**

No hazardous reaction when handled and stored according to provisions.

**Chemical stability**

Stable under normal storage and temperature conditions.

**Possibility of hazardous reactions**

None identified

**Conditions to avoid**

Contact with incompatible materials. Avoid high temperatures.

**Incompatible materials**

Strong oxidizing agents, reducing agents, bases.

**Hazardous decomposition products**

The substance dissociates into urea and phosphoric acid (corrosive) in aqueous media.

Thermal decomposition products: Carbon monoxide, carbon dioxide, nitrogen oxides, ammonia.

**11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects of the product or dissociation products.

**Likely routes of exposure (inhalation, ingestion, skin and eye contact)**

Eye contact and skin contact. Urea phosphate has a low vapour pressure and a high particle size, resulting in negligible inhalation exposure possible. Exposure by ingestion is not expected to occur through normal use of this product.

**Symptoms related to the physical, chemical and toxicological characteristics**

Urea phosphate causes severe skin burns and eye damage. May be corrosive/irritant to the respiratory tract. It is corrosive to mucous membranes, acute effects are related to its corrosivity.

**Information on toxicological effects from short and long term exposure**

**Acute toxicity**

Acute oral toxicity	LD50:	2600 mg/kg bw	Species:	Method
			Rat.	OECD Guideline 423

Data obtained by analogy conclusion

Assessment / classification:

Based on all available data, the classification criteria is not met.

**Irritant and corrosive effects**

Primary irritation to the skin

Result:

Species:

Skin irritation *in vitro* (OECD Guideline 435)

Corrosive (PKG II)

Not applicable, *in vitro*

Irritation to eyes

Result:

Species:

Existing data, skin corrosion

Corrosive

Not applicable

Assessment / classification

Urea phosphate is classified and labelled as Corrosive to Skin, Category 1B, and as Serious Eye Damage Category 1, in accordance with Appendix A to 29CFR section 1910.1200.

**Respiratory or skin sensitisation**

Skin sensitization

No information available.

Respiratory sensitization

No information available.

Assessment / classification:

Urea phosphate is classified as corrosive, thus, no information on skin sensitization is deemed necessary.

**Genetic effects**

*In-vitro* mutagenicity

Method

Result

Gene-mutations microorganisms

OECD Guideline 471/EU B.13/14

negative

Data obtained by analogy conclusion (phosphoric acid and urea)

Gene-mutations mammalian cells

OECD Guideline 476/EU B.17

negative

Data obtained by analogy conclusion (phosphoric acid and urea)

Chromosome aberrations mammalian cells

OECD Guideline 473/EU B.10

negative

Data obtained by analogy conclusion (phosphoric acid and urea)

Assessment / classification

Based on all available data, the classification criteria is not met.



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**Reproductive toxicity**

Adverse effects on reproduction

OECD guideline 422 NOAEL(P and F): ≥ 1500 mg/kg bw/day

Data obtained by analogy conclusion (diammonium hydrogenorthophosphate, DAP)

Urea is naturally formed in the human body. Urea has shown essentially no toxicity in available studies. It is therefore considered that urea is unlikely to cause adverse effects on reproduction. A chemically related substance (DAP) showed no reproductive effects in OECD 422 guideline study (at highest dose tested). Similar results were obtained with monosodium phosphate in a study similar to OECD guideline 414.

Adverse developmental effects

OECD guideline 422 NOAEL(development): ≥ 1500 mg/kg bw/day

Data obtained by analogy conclusion (diammonium hydrogenorthophosphate, DAP)

Urea is naturally formed in the human body. Urea has shown essentially no toxicity in available studies. It is therefore considered that urea is unlikely to cause adverse developmental effects. A chemically related substance (DAP) showed no adverse developmental effects in an OECD 422 guideline study (at highest dose tested). Similar results were obtained with monosodium phosphate in a study similar to OECD guideline 414.

**Specific target organ toxicity (single exposure)**

Practical experience / human evidence

No relevant effect have been observed after single exposure to the substance.

Assessment / classification: Based on all available data, the classification criteria is not met.

**Specific target organ toxicity (repeated exposure)**

OECD guideline 422 NOAEL(C): 250 mg/kg bw/day

Data obtained by analogy conclusion (diammonium hydrogenorthophosphate, DAP)

Based on reliable study with DAP local effects were observed in the stomach at the lowest dose tested (250 mg/kg bw/day). However, the systemic NOAEL is determined to be 250 mg/kg bw/day based on horizontal banding of dental surface at mid dose (LOAEL), with effects on hematological and clinical chemistry parameters at highest dose level.

Assessment / classification: Based on all available data, the classification criteria is not met.

**Aspiration hazard**

Physicochemical data and toxicological information does not indicate an aspiration hazard.

Assessment / classification: Based on all available data, the classification criteria is not met.

**Carcinogenicity**

The carcinogenicity of urea was investigated in NCI 12 -month screening studies in the rat and mouse. No evidence of carcinogenicity or toxicity was seen in either study. There is no evidence of carcinogenicity or genotoxicity with phosphoric acid.

International Agency for Research on Cancer (IARC) Not listed as carcinogen or potential carcinogen

National Toxicology Program (NTP) Not listed as carcinogen or potential carcinogen

29 CFR part 1910, subpart Z Not listed as carcinogen or potential carcinogen

California Proposition 65

Assessment / classification: Based on all available data, the classification criteria is not met.

**Other Toxicological Information**

None

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Urea phosphate will dissociate into urea and phosphoric acid in aqueous environment.

**Aquatic toxicity**

**Acute Toxicity**

96-h LC50 > 9100 mg/L Fish Data obtained by analogy conclusion (literature information)

48-h EC50 > 100 mg/L *Daphnia magna* (Big water flea). EU C.2/OECD guideline 202

Data obtained by analogy conclusion

72-h EC50 > 100 mg/L *Desmodesmus subscipicatus* EU C.3/OECD guideline 201

Data obtained by analogy conclusion

192-h NOEC 47 mg/L *Microcystis aeruginosa*. (literature information)

Data obtained by analogy conclusion

3-h EC50 > 100 mg/L (urea phosphate Aquatic micro-organisms) OECD guideline 209/EU Method C.11

Assessment / classification: Product is considered as practically nontoxic to aquatic organisms (US EPA toxicity categories).



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**Persistence and degradability**

Urea phosphate completely dissociates in water forming urea and phosphoric acid. Urea is considered to be readily biodegradable as micro-organisms incorporate urea into the Nitrogen cycle. Urea is also utilized as N-source by terrestrial and aquatic plants. Phosphoric acid will dissolve in water and will progressively dissociate into its conjugated bases plus hydronium (H<sub>3</sub>O<sup>+</sup>) ions.

**Bioaccumulative potential**

Urea phosphate completely dissociates in water forming urea phosphoric acid. Urea and phosphoric acid have a low potential for bioaccumulation based on physicochemical properties.

**Mobility in soil**

Urea and phosphoric acid have low potential for adsorption.

**Other adverse effects**

Potentially local effect to aquatic organisms due to pH lowering of water.

**13. DISPOSAL CONSIDERATIONS**

Disposal should be in accordance with applicable federal and state laws.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal method in compliance with applicable regulations.

Urea phosphate is not listed as a dangerous waste in Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

**14. TRANSPORTATION INFORMATION**

**US DOT (49CFR part 172)**

UN-No.	UN 1759
UN Proper Shipping Name	CORROSIVE SOLIDS, N.O.S. (urea phosphate)
Hazard class	8
Packing group	II
Hazard label(s)	8, Corrosive
Special marking	None
Special Provision	IB8; IP2; IP4; T3; TP33

**International Maritime Organization (IMDG Code)**

UN-No.	UN 1759
UN Proper Shipping Name	CORROSIVE SOLID, N.O.S. (urea phosphate)
Hazard class	8
Packing group	II
Marine pollutant	No
Hazard label(s)	8, Corrosive
Special marking	None
Special Provision	274

**International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA)**

UN-No.	UN 1759
UN Proper Shipping Name	CORROSIVE SOLID, N.O.S. (urea phosphate)
Hazard class	8
Packing group	II
Hazard label	8, Corrosive
Special marking	None

**Special handling procedure**

None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Other special precautions**

None



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15. REGULATORY INFORMATION

US Federal

SARA Title III Rules

Section 311/312 Hazard Classes

Table with 2 columns: Hazard Class, Status. Rows: Acute Health Hazard (Yes), Chronic Health Hazard (No), Fire Hazard (No), Release of Pressure (No), Reactive Hazard (No)

Section 313 Toxic Chemicals

Not listed

Section 302 Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Urea phosphate is not listed.

Phosphoric acid is listed as CERCLA Hazardous Substance (RQ 5000 pounds (2270 kg)).

NFPA 704/2012: National Fire Protection Association

Table with 2 columns: Category, Rating. Rows: Health (3), Fire (0), Instability (0), Special (None)

US State Regulations

California Proposition 65 Not listed

Canada

Ingredient Disclosure List:

WHMIS Classification Class E - Corrosive Material

European Union

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Table with 3 columns: Hazard classes and Hazard categories, Hazard statements, and corresponding values like Skin Corr. 1B, H314, Causes severe skin burns and eye damage

Chemical Inventories

United States TSCA Listed

Canada DSL/NDSL The substance is specified on the Non-domestic Substances List and is subject to the New Substances Notifications Regulations (Chemicals and Polymers) of the Canadian Environmental Protection Act, 1999.

European Union (EINECS) Listed

China (IECS) Listed

Japan (METI) Listed

16. OTHER INFORMATION

This SDS complies with 29 CFR part 1910 subpart Z (2012), Canada Controlled Products Regulations (2010) and ANSI Standard Z400.1-2004

Prepared by Regulatory Affairs Department, SQM

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Last revision date July 2013

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.

Indication of changes

All sections were reviewed and modified to comply with 29CFR part 1910 subpart Z (2012).