

# Material Safety Data Sheet



MAD

## 1. Product and company identification

<b>Product name</b>	: MAD
<b>Supplier</b>	: Betco Corporation 1001 Brown Avenue Toledo, OH 43607 www.betco.com 888-462-3826
<b>Synonym</b>	: Not available.
<b>Trade name</b>	: Not available.
<b>Material uses</b>	: Special: Acidic. Cleaner.
<b>Manufacturer</b>	: Betco Corporation 1001 Brown Avenue Toledo, Ohio 43607 www.betco.com 888-462-3826
<b>Code</b>	: 135
<b>MSDS #</b>	: 135
<b>Validation date</b>	: 3/30/2015.
<b>Print date</b>	: 3/30/2015.
<b><u>In case of emergency</u></b>	: Chemtrec (800) 424-9300
<b>Product type</b>	: Liquid.

## 2. Hazards identification

### Emergency overview

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Yellow.
<b>Odor</b>	: Odorless.
<b>Signal word</b>	: DANGER!
<b>Hazard statements</b>	: CAUSES BURNS. . MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
<b>Precautionary measures</b>	: Do not breathe vapor or mist. Do not ingest. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential acute health effects

<b>Inhalation</b>	: Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterized by coughing, choking or shortness of breath.
<b>Ingestion</b>	: Harmful if swallowed. May cause burns to mouth, throat and stomach.
<b>Skin</b>	: Irritating to skin.
<b>Eyes</b>	: Severely corrosive to the eyes. Causes severe burns.

### Potential chronic health effects

<b>Chronic effects</b>	: Contains material that may cause target organ damage, based on animal data.
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.

## 2. Hazards identification

- Fertility effects** : No known significant effects or critical hazards.
- Target organs** : Contains material which may cause damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

### Over-exposure signs/symptoms

- Inhalation** : Not determined.
- 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

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

See toxicological information (Section 11)

## 3. Composition/information on ingredients

Name	CAS number	%
Phosphoric acid, solution	7664-38-2	20 - 40

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

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. In case of contact with eyes, rinse immediately with plenty of water.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

- Flammability of the product** : 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
phosphorus 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.
- Special remarks on fire hazards** : Not available.
- Special remarks on explosion hazards** : Not available.

## 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. Avoid breathing 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).
- Methods for 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). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. 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.

## 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. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. 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. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.

## 7. Handling and storage

- 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. 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

<u>Occupational exposure limits</u>		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredient	List name	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	Notations
Phosphoric acid, solution	US ACGIH 4/2014	-	1	-	-	3	-	-	-	-	[3]
	AB 4/2009	-	1	-	-	3	-	-	-	-	
	BC 4/2014	-	1	-	-	3	-	-	-	-	
	ON 1/2013	-	1	-	-	3	-	-	-	-	
	QC 1/2014	-	1	-	-	3	-	-	-	-	

[3]Skin sensitization

### 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** : 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.

- 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.

### Personal protection

- Respiratory** : 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.

- 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. 1 - 4 hours (breakthrough time): butyl rubber

- Eyes** : 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 or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: splash goggles

- 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.

## 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.

**Other protection** : Not available.

**Personal protective equipment (Pictograms)** :



## 9. Physical and chemical properties

**Physical state** : Liquid.

**Flash point** : Closed cup: Not applicable. [Product does not sustain combustion.]

**Burning time** : Not applicable.

**Burning rate** : Not applicable.

**Auto-ignition temperature** : Not available.

**Flammable limits** : Not available.

**Color** : Yellow.

**Odor** : Odorless.

**Taste** : Not available.

**Molecular weight** : Not applicable.

**Molecular formula** : Not applicable.

**pH** : <1

**Boiling/condensation point** : Not available.

**Melting/freezing point** : Not available.

**Critical temperature** : Not available.

**Relative density** : 1.123

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Volatility** : Not available.

**Odor threshold** : Not available.

**Evaporation rate** : Not available.

**SADT** : Not available.

**Viscosity** : Not available.

**Ionicity (in water)** : Not available.

**Dispersibility properties** : Easily dispersible in the following materials: cold water and hot water.

**Solubility** : Easily soluble in the following materials: cold water and hot water.

**Physical/chemical properties comments** : Not available.

## 10. Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Phosphoric acid, solution	LD50 Oral	Rat	1.25 g/kg	-

**Conclusion/Summary** : Not available.

### Chronic toxicity

Not available.

**Conclusion/Summary** : Not available.

### Irritation/Corrosion

Not available.

**Conclusion/Summary** : Not available.

### Sensitizer

Not available.

**Conclusion/Summary** : Not available.

### Carcinogenicity

Not available.

**Conclusion/Summary** : Not available.

### Classification

Not available.

### Mutagenicity

Not available.

**Conclusion/Summary** : Not available.

### Teratogenicity

Not available.

**Conclusion/Summary** : Not available.

### Reproductive toxicity

Not available.

**Conclusion/Summary** : Not available.

**Synergistic products** : Not available.

## 12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Phosphoric acid, solution	Acute EC50 105 ppm Fresh water Acute LC50 60 ppm Fresh water	Daphnia - Daphnia magna Fish - Lepomis macrochirus	48 hours 96 hours

**Conclusion/Summary** : Not available.

### Persistence/degradability

Not available.

**Conclusion/Summary** : Not available.

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

**Bioconcentration factor** : Not available.

**Mobility** : Not available.

**Toxicity of the products of biodegradation** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## 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.

**Waste stream** : Not available.

**RCRA classification** : Not available.

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.

## 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information

## 14. Transport information

<b>DOT Classification</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution) RQ (Phosphoric acid, solution)	8	III		<b>Reportable quantity</b> 22222.2 lbs / 10088.9 kg [2373.3 gal / 8983.9 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.  <b>Limited quantity</b> Yes.
<b>TDG Classification</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution)	8	III		<b>Explosive Limit and Limited Quantity Index</b> 5
<b>Mexico Classification</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution)	8	III		-
<b>ADR/RID Class</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution)	8	III		<b>Tunnel code</b> (E)
<b>IMDG Class</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution)	8	III		-
<b>IATA-DGR Class</b>	1760	Corrosive liquid, n.o.s. (Phosphoric acid, solution)	8	III		-

PG\* : Packing group

## 15. Regulatory information

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

**WHMIS (Canada)** : Class E: Corrosive material

**Canadian lists**

**Canadian NPRI** : The following components are listed: Phosphorus (total)

**CEPA Toxic substances** : None of the components are listed.

**Canada inventory** : All components are listed or exempted.

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

**International regulations**

## 15. Regulatory information

- 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**: Not determined.  
**Malaysia Inventory (EHS Register)**: Not determined.  
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: Not determined.  
**Taiwan inventory (CSNN)**: Not determined.
- Chemical Weapons Convention List Schedule I Chemicals** : Not listed
- Chemical Weapons Convention List Schedule II Chemicals** : Not listed
- Chemical Weapons Convention List Schedule III Chemicals** : Not listed

## 16. Other information

**Label requirements** : CAUSES BURNS. . MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

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

Health	*	2
Flammability		0
Physical hazards		0

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.

**References** : Not available.

**Other special considerations** : Not available.

**Date of printing** : 3/30/2015.

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**Date of previous issue** : 9/5/2012.

**Version** : 1

**Prepared by** : Not available.

☑ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.