

SAFETY DATA SHEET

1. Identification

Product Identifier	Bro-4
Other means of identification	BMF-1262
Product code	
Recommended use	Acid porcelain cleaner.
Recommended restrictions	Professional use only.
Manufacturer information	
Company name	Brothers MFG.
Address	10900 60 th Street N. Grant, MN 55082
Telephone	(651) 646-1696
Emergency phone number	PERS 24-hour Emergency (800) 633-8253

2. Hazard(s) Identification

Physical hazards	Corrosive to metals.	Category 1
Health hazards	Serious eye damage. Skin corrosion.	Category 1 Category 1B
Environmental hazards	Not classified.	
OSHA defined hazards	None.	
Label elements		



Signal word	DANGER
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe dusts or mists. Wash skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Response	Absorb spillage to prevent material damage. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable breathing. Immediately call a POISON CENTER/doctor/medical professional. Specific treatment (see supplemental information on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Storage	Store in corrosive-resistant container with a resistant inner lining. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None.
Supplemental information	None.

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3. Composition/information on ingredients

Mixture Component(s)		
Chemical name	CAS number	%
Phosphoric acid	7664-38-2	5-10
2-propanol	67-63-0	1-5
2-butoxyethanol	111-76-2	1-5
Sulfamic acid	5329-14-6	1-5
Other components below reportable levels		75-92

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse with water for at least 15 minutes. Remove contact lenses if present and easy to do so. Immediately call a physician or transport to hospital.
Ingestion	Rinse mouth. Get medical attention immediately. Do not induce vomiting.
Most important symptoms/effects, acute and delayed	Can cause serious eye damage. Can cause burning sensation in affected areas. Shortness of breath, respiratory tract irritation or damage.
Indication of immediate medical attention and special treatment needed	Provide general support measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Wash contaminated clothing before reuse. Use with extreme caution.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protecting clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk. This product is highly acidic. Avoid contact or inter-mixing with strong caustics and chemical oxidizers
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	This product is fully miscible in water. Large spills: Stop the flow of material if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry

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sand or earth and place into containers. Prevent entry into waterways, sewer, basements, or confined areas. Following product recovery, flush area with water.

Small spills: Wipe up with absorbent material (e.g., cloth, absorbent wipes). Clean surface thoroughly with water to remove residual contamination.

Never return spills to original container for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into the open environment and other areas not consistent with package labeling.

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid	PEL	1 mg/m ³
2-propanol	PEL	400 ppm
2-butoxyethanol	PEL	50 ppm

US ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid	STEL	3 mg/m ³
2-propanol	STEL	400 ppm
2-butoxyethanol	STEL	20 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Species	Sampling Time
2-propanol	40 mg/L	Acetone	Urine	End of shift at end of
2-butoxyethanol	200 mg/g	Creatinine	Urine	workweek. End of shift

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels to an acceptable level. It is recommended that users of this product perform a risk assessment to determine the appropriate personal protective equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection

Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Nitrile and neoprene rubber are recommended barrier materials

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

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Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke or use chewing tobacco. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	
Physical State	Liquid.
Color	Colorless.
Odor	Herbal
Odor threshold	Not available.
pH	0-1
Melting/freezing point	14°F (-10°C) estimated.
Initial boiling point and boiling range	>212°F (>100°C)
Flash point	Not applicable.
Evaporation rate	Not available.
Flammability	Not available.
Flammability Limits	
Upper	Not available.
Lower	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity (water=1)	1.07
Solubility in water	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	This product is stable and non-reactive under normal conditions of use.
Chemical stability	Material is stable under normal conditions. Store in a cool dark place.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid storage in elevated temperatures.
Incompatible materials	Bases, amines, metals. DO NOT MIX WITH BLEACH.
Hazardous decomposition products	No hazardous decomposition products occur. In case of fire see section 5.

11. Toxicological information

Information on likely routes of exposure	
Ingestion	Do not ingest. May be harmful if swallowed.
Inhalation	Do not inhale. May cause damage to the upper respiratory tract.
Skin contact	Can cause severe skin burns.

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Eye contact Can cause serious eye damage.

Symptoms related to the physical, chemical, and toxicological characteristics Burning sensation, coughing, wheezing, shortness of breath.

Acute toxicity Not classified.

Product Bro-4 (CAS mixture)		
	Route and Species	LD ₅₀ /LC ₅₀
Acute	Oral, rat	8,700 mg/kg (estimated)
Acute	Dermal, rat	>, 11,350 mg/kg (Literature)
*Estimates for product may be based on additional component data not shown		

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/ irritation Causes serious eye damage.

Respiratory sensitization Not considered a respiratory sensitizer.

Skin sensitization Not considered a skin sensitizer.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not considered a carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not Listed.

Reproductive toxicity No data available.

Specific target organ toxicity – single exposure May cause damage to the upper respiratory tract with prolonged inhalation.

Specific target organ toxicity – repeated exposure No data available.

Aspiration hazard No data available.

12. Ecological information

Ecotoxicity		
Product Bro-4 (CAS mixture)		
Aquatic Receptor	Species	Test Thresholds
Fish	Fathead Minnow	EC ₅₀ (92-hour) >200 mg/L (estimated)
Algae	(non-specific)	EC ₅₀ (48-hour, static) >130 mg/L (literature)
*Estimates for product may be based on additional component data not shown		
<i>Specific toxicity threshold cannot be derived as the potential effects are highly dependent upon the pH of the receiving water and its buffer capacity highly variable.</i>		

Persistence and degradability No data available. Chemicals of this class are not expected to be persistent in an open, aerobic environment

Bio-accumulation potential Not data available. Components are highly water-soluble and not expected to accumulate in dynamic biological systems

Partition coefficient n-octanol/water (log K_{ow}) Not available.

Mobility in soil No data available. Chemicals of these classes are expected to exhibit moderate to high mobility in saturated and semi-saturated soils. Mobility is enhanced with select chemicals this will dissociate into ionic fractions when dissolved in water.

Other adverse effects May be harmful to plants or wildlife in high concentrations. pH of this product is exceptionally low and will impact all aquatic environments sensitive to changes in pH

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13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer, and the waste disposal company. As packaged, this product may meet criteria defining RCRA corrosive (D002) hazardous wastes when disposed. (40 CFR Part 261, Subpart C). Before selecting disposal method, ensure that the waste materials have been accurately assessed and, as necessary, tested to confirm regulatory status.
Waste from residues/unused product	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner. (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may contain product residue, follow label warnings even after container is emptied.

14. Transport information

USDOT

UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Contains: Phosphoric Acid)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packaging group	III
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not intended to be transported in bulk.
DOT Label/Placard	



15. Regulatory information

US federal regulations	.
SARA 302 Extremely hazardous substance	Not listed.
SARA 304 Emergency release notification	Not listed.
SARA 311/312 Hazard Categories	
	Immediate Hazard - Yes
	Delayed Hazard – No
	Fire Hazard – No

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Pressure Hazard – No
Reactivity Hazard – No

SARA 313 (TRI reporting)

2-butoxyethanol (Glycol Ether Category)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986

This product is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to threshold determination and Safe Harbor notification (3/2021)

16. Other information, including date of preparation or last revision.

Issue date 12/22/2021
Revision date
Version # 1
HMIS® ratings Health: 2
Flammability: 0
Physical hazard: 0

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	<input type="checkbox"/>

Acid

NFPA ratings Health: 2
Flammability: 0
Instability: 1



Health: 2
Flammability: 0
Physical hazard: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge and have been obtained from resources believed to be reliable. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information related only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified by the text.

Revision information

First issue.