Safety Data Sheet

1. Identification

Product identifier **EB Mix**
Other means of identification Not available.
Synonyms Not available.
Recommended use Fertilizer.
Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor Information

Company name CHS Inc
Address 5500 Cenex Drive
Inver Grove Heights, MN 55077 US

Telephone 1.651.355.6000
Website www.chsinc.com
Contact person EH&S/Regulatory Department
Emergency phone number CHEMTREC (24 hours): 1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute Toxicity	Category 4	Oral, Dermal, Inhalation
Skin Irritation	Category 2	Mild Skin Irritant
Eye Irritation	Category 2B	Mild Eye Irritant

OSHA defined hazards Not classified.

Label elements

Hazard symbol

Signal word Warning.

Hazard statement Mildly irritating to skin and eyes.

Precautionary statement

Prevention Wash thoroughly after handling. Use skin and eye protection while using this product.

Response 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 Store away from incompatible material.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Not classified.

Supplemental information
Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Water	7732-18-5	20 – 30
Citric acid, anhydrous	77-92-9	10 – 20
Manganese sulfate, monohydrate	10034-95-5	1 – 10
Zinc sulfate, monohydrate	7446-19-7	1 – 10
Ferrous sulfate, heptahydrate	7782-63-0	1 – 10
Boric acid	10043-35-3	1 - 5
Free ammonia	7664-41-7	0.02 – 0.15

Composition comments

All concentrations are in weight unless ingredient is a gas. Gas concentrations are in percent by volume.
This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

4. First-aid measures

Eye contact

Check for and remove contact lenses. Flush immediately with copious amounts of water or normal saline (minimum of 15 minutes), holding eyelids apart to ensure complete irritation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an opthalmologist, for further evaluation.

Skin contact

Remove contaminated clothing, shoes and equipment. Wash exposed area with plenty of soap and water. Repeat washing. If redness or irritation occurs, seek medical attention. Wash contaminated clothing before reuse.

Inhalation

No adverse effects anticipated. If necessary, remove victim to fresh air and loosen clothing. Get medical attention.

Ingestion

Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed

Symptoms include itching, burning, redness, and tearing of eyes.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

Slight fire hazard. When water evaporates from this product residues may contain ammonium nitrate, and solid ammonium nitrate when sensitized during decomposition may become unstable and explosive.

Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from the fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid inhalation of vapors and spray mist and contact with skin and eyes. Wear suitable protective clothing. For personal protection see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling	Avoid inhalation of vapors/spray and contact with skin and eyes. Use only with adequate ventilation. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store in a cool, dry well-ventilated place. Store away from incompatible materials.
Transfer Equipment	Transfer product using chemical-resistant plastic or stainless steel tanks, pumps, valves, etc.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Ammonia (CAS 7664-41-7)	PEL	35 mg/m^3 50 ppm

US ACGIH Threshold Limit Values

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Ammonia (CAS 7664-41-7)	TWA	18 mg/m^3 25 ppm

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

Composition	Type	Value
Ammonia (CAS 7664-41-7)	STEL	27 mg/m^3 35 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines	Follow standard monitoring procedures.
Appropriate engineering controls	Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists.

Individual protection measures such as personal protective equipment

Eye/face protection	Wear approved safety glasses or goggles.
Skin Protection	
Hand protection	Chemical resistant gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of vapors use suitable respiratory equipment. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134 and ANSI Z88.2.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene consideration	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. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	
Physical State	Liquid.
Form	Liquid.
Color	Brown.
Odor	Slight ammonia
Odor threshold	Not available.
pH	8.0 – 8.9
Melting point/freezing point	<15°F (-10°C)
Initial boiling point and boiling range	225°F (107.22°C)
Flash point	Not available.
Evaporation Rate	Not available.
Flammability (solid, gas)	Not available.
Vapor pressure	Not available.
Vapor Density (Air=1)	Not available.
Relative density	1.296 @ 15°C
Solubility	100%
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	Not available.

10. Stability and reactivity

Reactivity	Reacts violently with strong acids.

Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Heat, sparks, flames, elevated temperatures.
Incompatible materials	Reacts with strong acids.
Hazardous decomposition Products	Carbon oxides. Nitrogen oxides (NOX). Metal oxide fumes and water vapor.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and malaise.
Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	May cause eye irritation on direct contact.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms can include irritation, redness, scratching of the cornea, and tearing.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test Results
Ammonia (CAS 7664-41-7)		
Acute		
Oral		
LD50	Rat	5.1 mg/l, 1 hour
Inhalation		
LC50	Rat	350 mg/kg, as Ammonia hydroxide

Skin corrosion/irritation	Prolonged exposure may cause skin irritation.
Serious eye damage/eye irritation	May cause eye irritation on direct contact.
Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No data available.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	No data available.
Specific target organ toxicity-single exposure	No data available.
Specific target organ toxicity-repeated exposure	No data available.
Aspiration hazard	Not classified.
Chronic effects	Prolonged exposure may cause chronic effects.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Ammonia (CAS 7664-41-7)			
Aquatic			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.43 – 0.47 mg/L, 96 hours

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

This product is water soluble and may disperse in soil.

Other adverse effects

No data available.

13. Disposal considerations

Disposal instructions

Do not allow this material to drain into sewers/water supplies. 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.

Waste from residues / unused products

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as a hazardous material by DOT.

IATA

Not regulated as a dangerous goods.

IMDG

Not regulated as a dangerous goods.

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

Not established.

15. Regulatory information

US federal regulations

This product is not known to be a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ammonia (CAS 7664-41-7) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard – No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Ammonia (CAS 7664-41-7)

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US Massachusetts RTK – Substance List
Ammonia (CAS 7664-41-7)

US New Jersey Worker and Community Right-to-Know Act
Ammonia (CAS 7664-41-7) 500 lbs

US Pennsylvania RTK – Hazardous Substances
Ammonia (CAS 7664-41-7)

US Rhode Island RTK
Ammonia (CAS 7664-41-7)

US California Proposition 65
US – California Proposition 65 – Carcinogens & Reproductive Toxicity (CRT): Listed substances
Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date 1-May-2020

Revision date

Version # **CHS v** SDS

NFPA Ratings

List of abbreviations

EC50: Effective concentration, 50%.
LC50: Lethal concentration, 50%.

References

EPA: Acquire database
HSDB® – Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Value and Biological Exposure Indices

Preparation

The preparation of this MSDS was in accordance with ANSI Z400.1-2010.

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.