MATERIAL SAFETY DATA SHEET

US AG INC.
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SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

a. **Product Identifier:** **TRANS-BUFF** **water conditioner and buffer**
Registration Number: Not Available
Formulation Number: 103104 A4
Chemical Classes: water conditioner and buffer blend

b. **Synonyms**: fertilizer solution, water softener, buffer, acidifier.

c. **Name of Supplier, Address and Emergency Telephone Number** - See above.

d. **Product Use:** As a water conditioner and buffer for certain pesticide applications. Diluted with water prior to use

e. **Date of MSDS Preparation:** 03-07-05 modification of original 10-31-04.

f. **Name and Telephone Number of Party Responsible for MSDS Preparation:**
Adjuvants Unlimited, Inc., Greg McManic at 901-755-8036

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

a. **Chemical Identity and CAS Registry No. of hazardous ingredients present at 1.0%, or 0.1% as appropriate, by weight**. MCDS buffer blend CAS# 21351-39-3

b. **Ingredients present, which are on the OSHA Hazard List at, or above, the minimum concentration specified on the List. 29 CFR 1910.1200**

c. **Ingredients with unknown toxicological properties:** None

d. **Ingredients the supplier believes may be harmful:** None

e. **Generic chemical identity and Registry Number for trade secret ingredients registered under the Hazardous Materials Information Review Commission:** None

f. **Ingredient concentration in units of wt./wt., vol./vol. or wt./vol.** expressed as: i) actual concentration, or ii) a range as specified in the Controlled Product Regulations.
Fertilizer, water conditioner, buffer blend 100%

g. **Exposure limits for ingredients:**
Recommend following ACGIH TLVs for acids: 8 hour TWA: 1 mg/m³ and 15 minute STEL: 3 mg/m³

SECTION 3 HAZARDS IDENTIFICATION

Potential Health Effects:

Relevant routes of exposure: - ingestion, inhalation, skin, eye contact.

EYE CONTACT:
Contact with eyes may result in severe irritation: permanent injury may result.

SKIN CONTACT:
Contact with the skin may result in mild dermatitis. Skin contact may aggravate an existing dermatitis condition.
INHALATION:
May cause irritation and burning to the upper respiratory tract.
INGESTION:
Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause severe burns and severe pulmonary injury and into the lungs due to vomiting can cause chemical pneumonitis, which can be fatal.
CHRONIC EFFECTS:
None known.

Medical conditions known to be aggravated:
Persons with preexisting dermatitis, respiratory disorders, or an allergic history should use extra care in handling this product.

SECTION 4 FIRST AID MEASURES

IF POISONING IS SUSPECTED, or any symptoms are serious, immediately contact the poison information centre, doctor or nearest hospital. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms, and follow the advice given.

EYES:	Flush eyes with plenty of clean water, holding eyelids apart for at least 15 minutes. Do not permit victim to rub eyes. Obtain medical attention immediately.
SKIN:	Immediately flush skin with plenty of water while removing contaminated clothing. Obtain medical attention immediately. Wash contaminated clothing before reuse.
INHALATION:	Immediately move the victim to fresh air. If victim has stooped breathing give artificial respiration. Keep at rest. Call for prompt medical attention.
INGESTION:	Do not induce vomiting. If victim is fully conscious, immediately give a large amount of water to drink. Never give anything by mouth to a victim who is unconscious or having convulsions. Apply artificial respiration if necessary. Call a doctor or poison control centre immediately.

SECTION 5 FIRE FIGHTING MEASURES

1. **Flash point and method:** Greater than 200F via PMCC.
2. **Upper and lower flammable (explosive) limits in air (% by volume):**
   not applicable
3. **Auto ignition temperature:** Not applicable
4. **Hazardous combustion products:** Thermal decomposition may produce oxides of carbon, nitrogen and sulfur.
5. **Conditions under which flammability could occur:** None
6. **Extinguishing media:**
   Use water spray preferable in the form of a fog, dry chemical, foam or carbon dioxide.
   Avoid excessive water. If a spill or leak has not ignited, use water spray to disperse the vapours.
   Treat as a liquid chemical type fire where discharges to the environment are to be controlled as quickly as possible.
   Use of buildings, area and equipment is to be prevented until properly decontaminated.
7. **Sensitivity to explosion by mechanical impact:** No
8. **Sensitivity to explosion by static discharge.** No

SECTION 6 ACCIDENTAL RELEASE MEASURES

b. **Procedures for dealing with release or spill:**

Corrosive liquid. Stop leak and clean up spills immediately, wearing protective clothing.
In case of a major spill: Isolate and barricade area and keep bystanders away. Contact local government for advice.

For small Spills: Stop leak, isolate area and contain spill keeping out of sewers and drains by dyking. A Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Sweep up carefully and shovel into a disposable container. Disposal containers must be labeled appropriately. Rinse area with water and soak up with absorbent. Sweep and shovel up into a disposable container. For contaminated soil or gravel, remove 5 – 7 cm (2 – 3") for disposal and replace with fresh soil or gravel.

See Section 13 for waste disposal information.

SECTION 7 HANDLING AND STORAGE

b. **Handling practices:**

Keep out of reach of children, unauthorized persons and animals. Avoid eye contact and prolonged skin contact. Avoid inhalation of mists.
Wear protective clothing and after work, remove protective equipment, and wash hands before eating, smoking, drinking, or using the toilet. Clean up spilled material immediately, and clean clothes, equipment, and work area after use.

b. **Appropriate storage practices/requirements:**

Store in original container only in a well-ventilated, cool, dry, and secure area. Keep separate from other products to prevent cross contamination. Clean up any spilt material immediately. Will corrode incompatible metals such as aluminum, copper, zinc, and mild steel.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

b. **Applicable control measures, including engineering controls:**

Ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV listed. Develop written safety and inspection procedures. Warehouses, production areas, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

b. **Personal protective equipment for each exposure route:**

RESPIRATOR: Use an approved NIOSH respirator if ventilation is not adequate, particularly in hot non-ventilated spaces.
EYES: Wear safety glasses with side shields, goggles or face shield when direct exposure to product, splash or spray is likely.
SKIN: Wear full-length work clothing, enclosed boots, and a hat. Wear chemical resistant gloves and an apron if direct contact with the product or spray mix is likely.

c. Work place Exposure Guidelines.

Follow OSHA 29 CFR 1910.134 requirements whenever workplace conditions warrant use of a respirator.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

a. **Appearance:** Clear golden yellow colored liquid
b. **Odour:** Very slight pleasant odor
c. **Physical state:** Liquid
d. **pH:** (0.5% dispersion in water) 2.0 to 2.5
e. **Vapour pressure and reference temperature:** Not available
f. **Vapour density:** Not available
g. **Boiling point:** Not available
h. **Freezing/Melting point:** Not available
i. **Density:** 1.19 gm/L @ 20°C
j **Evaporation Rate:** Not available
k. **Water/oil partition coefficient:** Not available
l. **Odour threshold:** Not available
m. **Viscosity:** 325 cps. at 20°C

SECTION 10 STABILITY AND REACTIVITY

a. **Chemical stability:** Stable
b. **Conditions to avoid:** None
c. **Incompatibility with other materials:** bases, strong oxidising and reducing agents many metals (aluminium).
d. **Hazardous decomposition products:** Decomposition may produce oxides of carbon, nitrogen and toxic phosphorous compounds.
e. **Hazardous polymerisation:** Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

Information on product:

a. **LD50 (species and route)**
Not determined on this product.
LC50 (species)
Not determined

b. **Irritation data:**
This product will irritate human eyes severely following contact. Frequent or prolonged contact with human skin may burn the skin or possibly cause a skin rash (dermatitis) Skin contact may aggravate an existing dermatitis condition.

c. **Sensitisation**: This product is not expected to cause sensitisation.
d. **Carcinogenicity:** Not determined
e. **Reproductive toxicity**: Not determined.
f. **Teratogenicity**: Not determined.
g **Mutagenicity: Not** determined
h. **Chronic exposure:** prolonged or repeated exposure may result in severe irritation or corrosive effects.
i. **Other materials that show synergistic toxic effects together with the product:** None known.

SECTION 12 ECOLOGICAL INFORMATION

No data is available on this product. However, it is recommended that this product, wash or rinse water, and contaminated materials containing this product be kept out of water supplies, ground water, open water and drainage systems and away from access by people, animals, and birds.

SECTION 13 DISPOSAL CONSIDERATIONS

a. **Waste disposal information:**
Do not reuse containers. Rinse thoroughly three times. Consult state/ provincial environment ministry for advice on waste disposal of empty containers. All recovered material must be packaged, labeled, transported and disposed or reclaimed in conformance with applicable laws and regulations and in conformance with Good Engineering Practices. Avoid land filling of liquids. Reclaim where possible. be handled at licensed facilities only.

SECTION 14 TRANSPORT INFORMATION

a. **Shipping information such as shipping classification:**
Ship and store away from food, feed, seed, cosmetics, and medical supplies.
DOT Classification: Corrosive Liqid NOS(Monocarbamide di hydrogen sulphate)
DOT Hazard Required: TDG Class 8
Packaging: III
Bill of Lading Description:
NOTE: DOT regulated CORROSIVE LIQUID NOS if transported in aluminium, copper, zinc, or mild steel containers. NOT REGULATED if shipped or packaged in containers such as stainless steel or plastic containers which do not react dangerously with this material.

SECTION 15 REGULATORY INFORMATION

TSCA INVENTORY STATUS:
This product and/or all of its components are included on the TSCA Inventory of Chemical Substances.

SARA 311/312 HAZARD CATEGORIES: Acute, corrosive

SARA 313 TOXIC CHEMICALS:
Phosphoric Acid (7664-38-2) <0.0001%
Monocarbamide dihydrogen sulfate (21351-39-3) <50%

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES:
Ethylene Oxide (75-21-8) <0.0001%

CERCLA HAZARDOUS SUBSTANCES:
Ethylene Oxide (75-21-8) <0.0001%
Acetaldehyde (75-07-0) <0.0001%

SECTION 16 OTHER INFORMATION

HMIS RATINGS: HEALTH: 2 FLAMMABILITY: 0 REACTIVITY 2.

NFPA RATINGS: HEALTH: 2 FLAMMABILITY: 0 REACTIVITY 2.
