SAFETY DATA SHEET

SDS DATE: 05/20/2015

SECTION 1: IDENTIFICATION

Availa® Plus

Amino acid complexes of zinc, manganese, & copper, cobalt glucoheptonate, and potassium iodine
Livestock nutritional feed ingredient

Zinpro Corporation
10400 Viking Drive, Suite 240
Eden Prairie, MN 55344-7265

GENERAL INFO PHONE: ZINPRO 952-944-2736

EMERGENCY PHONE (Spill, Leak, Fire, Exposure, or Accident): CHEMTREC 1-800-424-9300 (US and Canada)
1-703-527-3887 (collect calls accepted)
Reference CCN 725293

SECTION 2: HAZARD(S) IDENTIFICATION

Cobalt
Classification: **Carcinogen, Category 2**

Health Hazard

Warning
Suspected of causing cancer

Labeling: **Not Required** for cobalt concentration <1%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% WT	EPCRA 313
Copper amino acid complex	**None**	**1.0% (as Cu)**	**Yes**
Zinc amino acid complex	**None**	**6.0% (as Zn)**	**Yes**
Manganese amino acid complex	**None**	**2.0% (as Mn)**	**Yes**
Cobalt glucoheptonate	**None**	**0.1% (as Co)**	**Yes**
Potassium iodide	**7681-11-0**	**<0.13% (as I)**	**No**

SECTION 4: FIRST AID MEASURES

Avoid contact with all workplace chemicals.

SKIN: After contact with skin, wash immediately with plenty of soap and water. Remove contaminated clothing and wash before reuse. If irritation develops, get medical attention.

EYES: Wash eyes with copious amounts of water. Consult a physician.

INGESTION: Wash mouth and throat repeatedly without swallowing. Do not induce vomiting without medical advice. Consult a physician if you feel unwell.

INHALATION: Move to fresh air. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical attention. If breathing has stopped, provide artificial respiration.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, CO_2, water spray, or foam as appropriate for surrounding materials.

COMBUSTION PRODUCTS: Burning may produce irritant fumes such as metal oxides, or toxic gases such as carbon monoxide.

FIRE FIGHTING PROCEDURES: Self-contained breathing apparatus in enclosed areas. Do not inhale combustion gases. Do not flush into storm drains.

UNUSUAL FIRE AND EXPLOSION HAZARDS: All granular materials have the potential to create a fire hazard if dust is generated during handling.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment including gloves and safety glasses or face shield when handling this product. When handling, do not eat, drink, or smoke.

ENVIRONMENTAL PRECAUTIONS: Prevent product from entering drains.

METHODS FOR CLEANING: Carefully sweep up and recover uncontaminated material for re-use. Scoop remaining waste into suitable, labeled container for disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Use only in an area provided with adequate ventilation.
Use personal protective equipment when handling this product.
Remove and wash contaminated clothing before re-use.
Store in tightly closed container at room temperature in a dry location.

OTHER PRECAUTIONS: ALWAYS minimize the generation of dust when handling.
This product contains metal compounds. Do not mix with acids or oxidizers except under controlled conditions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Potential workplace routes of exposure include inadvertent, incidental oral ingestion and inadvertent, incidental dermal contact. Inhalation is not a significant route of exposure.

EXPOSURE GUIDELINES:

U.S. Occupational Safety and Health Administration

Substance	Permissible Exposure Level
Copper-amino acid complex	None listed
Copper dust	1.0 mg/m^3 (TWA)
Manganese-amino acid complex	None listed
Manganese compounds (as Mn)	5.0 mg/m^3 (TWA)
Zinc-amino acid complex	None listed
Zinc dust	None listed
Potassium iodide	None listed
Cobalt glucoheptonate	None listed
Cobalt dust	0.1 mg/m^3 (TWA)
Nuisance dust (total)	15.0 mg/m^3 (TWA)
Nuisance dust (respirable fraction)	5.0 mg/m^3 (TWA)

ENGINEERING CONTROLS: Use only in a well-ventilated area to prevent exposure from exceeding regulatory levels.

RESPIRATORY PROTECTION: Protection is needed only when dust is formed. Use a mask suitable for dust. Proper handling to minimize dust is required. Do not smoke when handling this product.

EYE PROTECTION: Goggles or safety glasses with side-shields.

SKIN PROTECTION: Gloves

WORK HYGIENIC PRACTICES: Do not eat or drink when handling this product.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: **B**rown granular

ODOR: Sweet, organic

PHYSICAL STATE: Solid

pH: NA

MELTING POINT: >200 ºC

SPECIFIC GRAVITY (H2O = 1): 0.70 at 20ºC

SOLUBILITY IN WATER: Active product is water soluble; Carrier is insoluble

PERCENT SOLIDS BY WEIGHT: **1**00%

PERCENT VOLATILE: 0%

VOLATILE ORGANIC CMPDS (VOC): 0%

FLAMMABLE LIMITS IN AIR (% BY VOLUME) **UPPER:** NA **LOWER:** NA

FLASH POINT: >200 ºC

AUTOIGNITION TEMPERATURE: >200 ºC

SECTION 10: STABILITY AND REACTIVITY

STABILITY: This product is stable under recommended storage conditions and in normal use.

CONDITIONS TO AVOID (STABILITY): Avoid generation of dust while handling. As with all dusts, particularly those containing metals, finely divided airborne material may explode or burn when exposed to a source of ignition.

INCOMPATIBILITY (MATERIALS TO AVOID): Organic and metallic compounds are incompatible with acids and strong oxidizers. Potentially violent reactions may occur on mixing with these materials.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Thermal decomposition may release irritating gases, such as metal oxides, or toxic gases, such as carbon monoxide.

HAZARDOUS POLYMERIZATION: None

SECTION 11: TOXICOLOGICAL INFORMATION

Essential trace minerals are not a health hazard at low concentrations. This product contains one or more nutritionally-significant metals in organic complexes. The ingredients of this mixture have been evaluated in accordance with the Health Hazard criteria of the Globally Harmonized System of Classification and Labeling of Chemicals. The following information pertains to the individual mineral components of this product, but note that the product, as supplied contains no free metals.

Acute Toxicity: (Not Classified) Acute toxicity estimate (ATE) for this mixture: LD_{50} (oral) = 7,213 mg/kg

Acute toxicity data for metal constituents, LD_{50} (oral, rat):

Cobalt	6,171 mg/kg
Copper	~244 mg/kg
Iodine	16,000 mg/kg
Manganese	9,000 mg/kg
Zinc	630 mg/kg

Sub Acute/Chronic Effects associated with mineral components:

Skin Sensitizer:	Not Classified. This product contains cobalt in the mixture at a concentration=0.1% by weight. May cause an allergic skin reaction or other allergic response, particularly with repeated exposure. These effects are primarily associated with cobalt metal dust.
Carcinogen:	Category 2. The International Agency for Research on Cancer (IARC) has determined that cobalt and cobalt compounds are possibly carcinogenic to humans (Group 2B). This product contains an organic cobalt compound in the mixture at a concentration less than 1% by weight.
Mutagen:	Not Classified. Cobalt metal and stable inorganic cobalt compounds have been shown to be genotoxic or mutagenic in mammalian somatic cell assay systems. This product contains an organic cobalt compound in the mixture at a concentration less than 1.0% by weight.
Skin Irritant:	Not Classified
Eye Irritant:	Not Classified.
Reproductive Toxicity:	Not Classified. This product contains cobalt in the mixture at a concentration less than 3% by weight. May cause developmental effects in offspring. This is based only on animal studies.
Target Organ:	Not Classified
Aspiration toxicity:	Not Classified

SYMPTOMS OF OVEREXPOSURE to trace minerals: Irritation or burning of nose, throat, or skin; stomach cramps, nausea, vomiting, diarrhea, behavior changes, deterioration of motor skills.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE: Asthma or other respiratory problems, existing dermatitis

SECTION 12: ECOLOGICAL INFORMATION

This product contains copper, zinc, manganese, iodine, and cobalt. These are metals that occur naturally throughout the environment, in rocks, soil, and water and are essential elements in plants and animals. Inorganic compounds containing these metals have been utilized commercially as fungicides, algaecides, microbiocides, and wood preservatives, illustrating that targeted ecological effects of such materials do occur. There is no data regarding the actual eco-toxicity of the metal-amino acid complexes in this product, which is formulated and approved for ingestion by livestock.

SECTION 13: DISPOSAL CONSIDERATIONS

This product is not a hazardous waste as defined by 40 CFR 260 when disposed. As with all waste materials, it is recommended that residuals of this product and the container be disposed in a responsible manner at a licensed landfill or recycling center.

SECTION 14: TRANSPORT INFORMATION

This product is not listed or categorized as a hazardous material for transport in the U.S. at 49 CFR 172.101.

SECTION 15: REGULATORY INFORMATION

Mineral-amino acid complexes are not specifically regulated under any of the listed programs.
The metallic components as free metals or metal compounds are regulated as follows:

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT) listed: Copper and copper compounds
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): particles <0.004 in diameter RQ 5000 lb
EPCRA (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT):
302 EXTREMELY HAZARDOUS SUBSTANCE TPQ: Not EHS
304 EXTREMELY HAZARDOUS SUBSTANCE RQ: Not EHS
311/312 HAZARD CATEGORIES: Acute: No Chronic: Yes Fire: No Pressure: No Reactivity: No
313 REPORTABLE INGREDIENTS: Copper compounds N100 >1.0% by weight
CLEAN AIR ACT AMENDMENTS Section 112: Not listed as Hazardous Air Pollutant in Section 112 of the CAAA.

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT) listed: Manganese and compounds
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): No RQ is assigned, although the class is a CERCLA hazardous substance.
EPCRA (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT):
302 EXTREMELY HAZARDOUS SUBSTANCE TPQ: Not EHS
304 EXTREMELY HAZARDOUS SUBSTANCE RQ: Not EHS
311/312 HAZARD CATEGORIES: Acute: No Chronic: Yes Fire: No Pressure: No Reactivity: No
313 REPORTABLE INGREDIENTS: Manganese compounds N450 >1.0% by weight
CLEAN AIR ACT AMENDMENTS Section 112: Manganese may be subject to regulation if emitted to the air.

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT) listed: Zinc and zinc compounds
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): No RQ is assigned, although the class is a CERCLA hazardous substance.
EPCRA (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT):
302 EXTREMELY HAZARDOUS SUBSTANCE TPQ: Not EHS
304 EXTREMELY HAZARDOUS SUBSTANCE RQ: Not EHS
311/312 HAZARD CATEGORIES: Acute: No Chronic: No Fire: No Pressure: No Reactivity: No
313 REPORTABLE INGREDIENTS: Zinc cmpds N987 >1.0% by weight; Zinc as fume or dust, >1% by weight
CLEAN AIR ACT AMENDMENTS Section 112: Not listed as Hazardous Air Pollutant in Section 112 of the CAAA.

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT) listed: Iodine and iodine compounds
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): No RQ is assigned, although the class is a CERCLA hazardous substance.
EPCRA (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT):
302 EXTREMELY HAZARDOUS SUBSTANCE TPQ: Not EHS
304 EXTREMELY HAZARDOUS SUBSTANCE RQ: Not EHS
311/312 HAZARD CATEGORIES: Acute: No Chronic: No Fire: No Pressure: No Reactivity: No
313 REPORTABLE INGREDIENTS: Not listed
CLEAN AIR ACT AMENDMENTS Section 112: Not listed as Hazardous Air Pollutant in Section 112 of the CAAA.

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT) listed: Cobalt and cobalt compounds

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): No RQ is assigned, although the class is a CERCLA hazardous substance.

EPCRA (EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT):

302 EXTREMELY HAZARDOUS SUBSTANCE TPQ: Not EHS

304 EXTREMELY HAZARDOUS SUBSTANCE RQ: Not EHS

311/312 HAZARD CATEGORIES: Acute: No Chronic: Yes Fire: No Pressure: No Reactivity: No

313 REPORTABLE INGREDIENTS: Cobalt compounds N096 >0.1% by weight

CLEAN AIR ACT AMENDMENTS Section 112: Cobalt may be subject to regulation if emitted to the air.

STATE REGULATIONS: Refer to individual state agency for information.

INTERNATIONAL REGULATIONS: Refer to European Chemical Substance Information System (ESIS)
Refer to Australian Hazardous Substance Information System (HSIS)

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: DO NOT FEED TO SHEEP OR RELATED SPECIES

NFPA HAZARD CLASSIFICATION

HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0

HMIS HAZARD CLASSIFICATION

HEALTH: 1 FLAMMABILITY: 1 PHYSICAL: 0 PROTECTION: 1B

PREPARATION INFORMATION:

Centers for Disease Control (CDC) Agency for Toxic Substances and Disease Registry (ATSDR)
National Fire Protection Association (NFPA)
Hazardous Materials Information System (HMIS)
U.S. EPA Chemical Emergency Preparedness and Prevention Office (CEPPO) List of Lists
U.S. EPA Substance Registry Service (TSCA)
U.S. Dept of Labor Occupational Safety & Health Administration (OSHA) 29 CFR 1910.1000
U.S. Dept of Transportation (DOT) 49 CFR 172.101

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