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MATERIAL SAFETY DATA SHEET

Section 1. PRODUCT IDENTIFICATION

PRODUCT NAME: **AK-6215**

CHEMICAL DESCRIPTION: Aqueous alkaline solution
PRODUCT CLASS: Surface finishing
MSDS CODE: 0C43-10-09-96

Section 2. INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	% by Weight	OSHA PEL	ACGIH TLV
Sodium metasilicate	6834-92-0	< 15	None established	None established
Tetrapotassium pyrophosphate (TKPP)	7320-34-5	< 10	None established	None established
Potassium tripolyphosphate	13845-36-8	< 10	None established	None established
Modified polyether anionic surfactant	PROPRIETARY	< 10	None established	None established
Potassium hydroxide	1310-58-3	< 5	Ceiling 2 mg/m3	Ceiling 2 mg/m3

Section 3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********

Cloudy, yellow fluorescent liquid with mild chemical odor.
DANGER!
May cause severe eye and skin damage.
May cause severe digestive tract burns if swallowed.
May cause severe respiratory tract irritation.

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PRIMARY ROUTES OF ENTRY: Eye and skin contact, inhalation, ingestion

TARGET ORGANS: Eye, skin, mucous membranes

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: This product may cause severe irritation and damage upon contact with the eye.

SKIN CONTACT: This product may produce burns upon contact with the skin. The severity of the burn is generally determined by the concentration of the solution and the duration of the exposure.

INGESTION: Ingestion of this product may cause severe irritation or burns of the mucous membranes of the mouth, throat, esophagus and stomach.

INHALATION: Inhalation of low concentrations of mists or vapors may cause mucous membrane irritation with sore throat, coughing and shortness of breath. Intense exposure may result in destruction of mucous membranes and delayed pulmonary edema or pneumonitis.

SUBCHRONIC, CHRONIC: No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to the product. Prolonged exposure to high concentrations of mists of potassium hydroxide may cause discomfort and ulceration of nasal passages. Chronic inhalation of mist may result in varying degrees of irritation or damage to respiratory tract tissues and an increased susceptibility to respiratory illness. The effects of chronic exposure to eyes and skin are dependent upon concentration and duration of exposure. Dermatitis, conjunctivitis or effects similar to those for acute exposure may occur.

CARCINOGENICITY:
NTP: No ingredients listed in this section.
IARC: No ingredients listed in this section.
OSHA: No ingredients listed in this section.

Section 4. FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical aid immediately.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical aid immediately. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Give one or two glasses of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid.

Section 5. FIRE-FIGHTING MEASURES

FLASH POINT: > 200°F (> 93°C)
This product is not by definition a "flammable liquid" or a "combustible liquid".

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use extinguishing media appropriate for the surrounding fire.

FIRE-FIGHTING INSTRUCTIONS:
Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product emits toxic gases when heated to decomposition.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, phosphorus oxides, and dipotassium oxide.

NFPA RATINGS: Health = 3 Flammability = 1 Reactivity = 0 Special Hazard = None

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

Section 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent and place into suitable container.

Section 7. HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or clothing.
Avoid breathing vapor or mist.
Use with adequate ventilation.
Wash thoroughly after handling. Keep container closed when not in use.

STORAGE: No specific information.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Chemical splash goggles and face shield
SKIN PROTECTION: Chemical resistant gloves and protective clothing
RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Use local exhaust ventilation where mist or vapor may be generated.

WORK PRACTICES: Eye wash station and safety shower should be accessible in the immediate area of use.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Similar to water

SOLUBILITY IN WATER: Complete

VAPOR PRESSURE: Similar to water

SPECIFIC GRAVITY: 1.18 - 1.21 @ 25°C

VAPOR DENSITY (air = 1): Similar to water

pH: > 13 (undiluted), 11.3 - 12.0 (1% solution)

%VOLATILE BY WEIGHT: < 75

FREEZING POINT: Not available

APPEARANCE AND ODOR: Cloudy, yellow fluorescent liquid with mild chemical odor.

Section 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: No specific information.

INCOMPATIBILITY: Strong acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, phosphorus oxides, and dipotassium oxide.

Section 11. TOXICOLOGICAL INFORMATION

Test material	Oral LD50(rat)	Dermal LD50(rabbit)	Inhalation LC50(rat)
Sodium metasilicate	800 mg/kg	Not available	Not available
Tetrapotassium pyrophosphate (TKPP)	2440 mg/kg	> 2000 mg/kg	Not available
Potassium tripolyphosphate	Not available	Not available	Not available
Modified polyether anionic surfactant	2400 mg/kg	Not available	Not available
Potassium hydroxide	273 mg/kg	1260 mg/kg	Not available

Section 12. ECOLOGICAL INFORMATION

Environmental data:
Although the principal problem of phosphates in the environment is not directly related to human health, there is considerable concern about the effects of phosphorus from various sources on water quality. Phosphate is a major cause of the eutrophication process in lakes and ponds. Excessive phosphorus in association with other naturally occurring nutrients is directly responsible for various undesirable changes in surface water characteristics including increased amounts of algae and aquatic plants, decreased water transparency, altered water color, and decreased dissolved oxygen concentrations required to sustain living organisms.

Test Material	Aquatic Toxicity Data
Sodium metasilicate	96 hr LC50 (mosquito fish): 530 ppm 96 hr LC50 (Daphnia magna): 496 ppm 96 hr LC50 (rainbow trout): > 100 ppm
Tetrapotassium pyrophosphate	48 hr EC50 (Daphnia magna): > 100 ppm 48 hr LC50 (Daphnia magna): 22 ppm 96 hr LC50 (mosquito fish): 39 - 56 ppm
Modified polyether anionic surfactant	
Potassium hydroxide	

Section 13. DISPOSAL CONSIDERATIONS

RCRA STATUS: Discarded product, as sold, would be considered a RCRA Hazardous Waste based on the characteristic of corrosivity. The EPA Hazardous Waste Number is D002.

DISPOSAL: Dispose of in accordance with local, state and federal regulations.

Section 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Proper Shipping Name: Corrosive liquid, basic, inorganic, n.o.s. (contains Sodium metasilicate and Potassium hydroxide)
Class/Division: 8
ID Number: UN 3266
Packing Group: III
Label: Corrosive

Section 15. REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA reportable quantity of EPA hazardous substances in product:

Chemical Name	RQ
Potassium hydroxide	1000 lb

Product RQ: 50,000 lb (Notify EPA of product spills exceeding this amount.)

SARA TITLE III:

Section 302 Extremely Hazardous Substances:

Chemical Name	CAS #	RQ	TPQ
None			

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[yes]	[yes]	[no]	[no]	[no]

Section 313 Toxic Chemicals:

Chemical Name	CAS #	% by Weight
None		

Section 16. OTHER INFORMATION

HMIS RATINGS: Health = 3* Flammability = 1 Reactivity = 0

Personal Protective Equipment = X (to be specified by user depending on use conditions)

*There are potential chronic health effects to consider.

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe