



## MATERIAL SAFETY DATA SHEET

### SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: EdgeMet Solution A

IDENTIFICATION NUMBER: 20-8192a (Solution A)

PRODUCT USE/CLASS: Sample Prep Solution

SUPPLIER:

BUEHLER, LTD

41 WAUKEGAN ROAD

LAKE BLUFF, IL 60044

EMERGENCY: 800-424-9300

INFORMATION: 847-295-6500

PREPARER: Technical Department, 847-295-6500

PREPARE DATE: 04/03/2012, 03 April 2012

### SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME		CAS NUMBER		WT/WT%	
01	Nickel chloride		7718-54-9		5.0-10.0	
ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL – CEILING	COMPANY TLV-TWA	SKIN
01	0.1mg/m <sup>3</sup> (Ni)	N.E.	0.1mg/m <sup>3</sup> (Ni)	N.E.	0.15mg/m <sup>3</sup> (Ni)	NO
(SEE SECTION 16 FOR ABBREVIATION LEGEND)						

### SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful or fatal if swallowed. Harmful if inhaled. Causes skin and eye burns. May cause allergic skin reaction.

ACUTE EFFECTS – EYE CONTACT: CORROSIVE. Can cause eye burns and permanent tissue damage.

ACUTE EFFECTS - SKIN CONTACT: Repeated or prolonged contact may cause sensitization. CORROSIVE. Contact may cause chemical burns and blistering.

ACUTE EFFECTS – INHALATION: Harmful if inhaled. Causes respiratory tract irritation.

ACUTE EFFECTS - INGESTION: This material may be harmful or fatal if swallowed. May cause irritation or burns of mouth, throat, and stomach, with nausea, abdominal pain, and possible collapse.

CHRONIC OVEREXPOSURE EFFECTS: \*This product contains nickel. No exposure to free respirable nickel is anticipated during normal use of this product. IARC has listed metallic nickel as possibly carcinogenic to humans (Group 2B), and some nickel compounds, and nickel refining, have been listed as carcinogenic to humans (Group I). Studies involving nickel chloride, however, have specifically shown it to be not carcinogenic.

OTHER INFORMATION: Not Applicable.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT, INHALATION, EYE CONTACT

### SECTION 4 – FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothing separately before reuse.

INHALATION: If symptoms occur, remove to fresh air. Medical personnel may administer oxygen if breathing is difficult. Seek medical attention if symptoms persist.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN: If swallowed, gastric lavage is indicated. Treat symptomatically.

## SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT: N.A.

LOWER EXPLOSIVE LIMIT: N.A.

UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: No Flash

EXTINGUISHING MEDIA: Unknown

UNUSUAL FIRE AND EXPLOSION HAZARDS: Does not burn.

SPECIAL FIREFIGHTING PROCEDURES: Does not burn.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Dike or contain spill. Reclaim clean material.

Absorb contaminated material with inert absorbent such as clay. Sweep up used absorbent into appropriate waste container and dispose of in accordance with applicable federal, state and local regulations. Prevent washings from entering waterways.

## SECTION 7 – HANDLING AND STORAGE

HANDLING: Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Avoid contact with skin and eyes.

STORAGE: Keep from freezing.

## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation usually adequate.

RESPIRATORY PROTECTION: None normally required under general ventilation. If TLV/PEL is exceeded, if use is performed in a poorly-ventilated space, or if inhalation effects occur, use NIOSH-approved vapor cartridge respirator in accordance with applicable health and safety regulations and manufacturer's recommendations.

SKIN PROTECTION: Clean clothing to cover skin. Rubber or synthetic gloves.

EYE PROTECTION: Chemical splash goggles. Face shield.

OTHER PROTECTIVE EQUIPMENT: Accessible eye wash and safety shower.

HYGIENIC PRACTICES: Follow good general industrial safety practices during use. Do not smoke or eat during use.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE:	N.A.	VAPOR DENSITY:	Is heavier than air
ODOR:	Mild Sweet	ODOR THRESHOLD:	No data
APPEARANCE:	Green	EVAPORATION RATE:	Is slower than Butyl Acetate
SOLUBILITY IN H <sub>2</sub> O:	Complete		
FREEZE POINT:	32 Def F	SPECIFIC GRAVITY:	1.0865
VAPOR PRESSURE:	17.5mmHg @ 20 C	pH @ 0.0%:	N.D
PHYSICAL STATE:	Liquid	VISCOSITY:	Low
COEFFICIENT OF WATER/OIL DISTRIBUTION:	No data		

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

## SECTION 10 – STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Not Applicable.

INCOMPATIBILITY: Nickel will react with acids to liberate hydrogen gas which can form explosive mixtures with air.

Potassium, F<sub>2</sub> ; NH<sub>4</sub>NO<sub>3</sub>; Hydrazine; NH<sub>3</sub>; (H<sub>2</sub> + dioxane); performic acid; P; Se; S; (Ti + KClO<sub>3</sub>); oxidants, perchlorates.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Under special conditions, nickel can react with carbon monoxide in reducing atmospheres to form nickel carbonyl, an extremely toxic gas.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

## SECTION 11 – TOXICOLOGICAL PROPERTIES

### COMPONENT TOXICOLOGICAL INFORMATION:

----- CHEMICAL NAME -----	----- LD50 -----	----- LC50 -----
Nickel chloride	No information	No information

## SECTION 12 – ECOLOGICAL INFORMATION

ECOLOGICAL TEST DATA: Not Available

## SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Review all current federal, state, and local regulations regarding health and disposal for appropriate disposal procedures. This material and/or its container must be disposed of as hazardous waste.

## SECTION 14 – TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Corrosive Liquid, nos	
DOT TECHNICAL NAME: (Nickel chloride)	HAZARD SUBCLASS: NONE
DOT HAZARD CLASS: 8	PACKAGING GROUP: III
DOT UN/NA CLASS: UN1760	RESP. GUIDE PAGE: 153
INTERNATIONAL SHIPPING NAME: Corrosive Liquid, nos (Nickel chloride)	
INTERNATIONAL ID NUMBER: UN1760	
IMDG CLASS (1°, 2°): 8, none	IMDG PAGE NUMBER: III
IMDG EMS: 805	IATA CLASS (1°, 2°): 8, none

## SECTION 15 – REGULATORY INFORMATION

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA – SARA HAZARD CATEGORY: THIS PRODUCT HAS BEEN REVIEWED, AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES: IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

SARA SECTION 313: THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 AND 40 CFR PART 372:

----- CHEMICAL NAME -----	CAS NUMBER	WT/WT % IS LESS THAN
Nickel chloride	7718-54-9	5.0-10.0

TOXIC SUBSTANCE CONTROL ACT: THE CHEMICAL SUBSTANCES IN THIS PRODUCT ARE ON THE TSCA SECTION 8 INVENTORY. THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

----- CHEMICAL NAME -----	CAS NUMBER
No components found.	

## SECTION 15 – REGULATORY INFORMATION

NEW JERSEY RIGHT-TO-KNOW: THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP 5 COMPONENTS IN THIS PRODUCT:

----- CHEMICAL NAME -----	CAS NUMBER
Water	7732-18-5
Sodium citrate	68-04-2
Sodium acetate	127-09-3

PENNSYLVANIA RIGHT-TO-KNOW: THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

----- CHEMICAL NAME -----	CAS NUMBER
Water	7732-18-5
Sodium citrate	68-04-2
Sodium acetate	127-09-3

CALIFORNIA PROPOSTION 65: WARNING: This product contains a chemical(s) known to the state of California to cause cancer. (nickel)

CANADIAN WHMIS: THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: D1B, E

COMPONENT RCRA CLASSIFICATIONS: EP Toxic

COMPONENT RCRA CODES: Not Applicable.

CERCLA RQ VALUE (MINIMUM): 100

## SECTION 16 – OTHER INFORMATION

### HMIS RATINGS

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 3/23/2009, 23 March 2009

REASON FOR REVISION: Periodic Review

VOLATILE ORGANIC COMPOUNDS: 0 grams/ltr

### LEGEND:

N.A. – NO INFORMATION

N.E. – NOT ESTABLISHED

N.D. – NOT DETERMINED

ABBREVIATIONS: ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS; OSHA = OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION; TLV-TWA = THRESHOLD LIMIT VALUE – TIME WEIGHTED AVERAGE (8 HOURS); STEL = SHORT-TERM EXPOSURE LIMIT (15 MINUTES); C = CEILING VALUE; PEL = PERMISSIBLE EXPOSURE LIMIT

DISCLAIMER: TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED IN THIS MSDS IS ACCURATE OR IS OBTAINED FROM SOURCES BELIEVED TO BE ACCURATE. HOWEVER, NO LIABILITY, EXPRESSED OR IMPLIED, IS ASSUMED FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN. BUYER ASSUMES LIABILITY IN ITS USE OF THE MATERIAL.