



Mueller Sports Medicine, Inc.
 One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568
 EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

MATERIAL SAFETY DATA SHEET

MATERIAL Instant MuellerKOLD® Cold Pack	DATE ISSUED 04-23-11 - Rev 02	SUPERCEDES 06/18/08- Rev. 01
--	---	--

PRODUCT DESCRIPTION: A waterproof package containing small, white urea pellets and ammonium chloride salt surrounding a small rupturable plastic bag filled with water. When the water, urea and ammonium chloride mix, the liquid becomes cold.

PRODUCT USE: Pack used for temporary temperature maintenance.

MANUFACTURER: Mueller Sports Medicine, Inc.
 One Quench Drive
 Prairie du Sac, WI 53578 USA
 TELEPHONE: 608-643-8530

***** I - INGREDIENTS *****

	APPROXIMATE WEIGHT %	TWA/TLV
Urea (CAS No. 57-13-6)	40-50	None established
Ammonium chloride (CAS No. 12125-02-9)	1 - 10	None established
Water (CAS No. 7732-18-5)	50-60	None established

***** II - PHYSICAL AND CHEMICAL PROPERTIES *****

When mixed, liquid packaged in a waterproof container.

APPEARANCE White, odorless solid chemicals with water bag	pH not known
BOILING POINT Not known	ODOR No odor
VAPOR DENSITY (Air=1) Not known	MELTING OR FREEZING POINT Not known
SPECIFIC GRAVITY (WATER = 1) >1.0 @ 25°C	VAPOR PRESSURE (mm Hg) Not known
	SOLUBILITY IN WATER Soluble

***** III - HAZARDS IDENTIFICATION *****

EMERGENCY OVERVIEW:
 Instantly cold upon mixing of components / ingredients.

If packaging is broken, direct contact with dry chemicals or solution may be irritating to the skin, eyes, throat, and mucous membranes.



Mueller Sports Medicine, Inc.
One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568
EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

POTENTIAL HEALTH EFFECTS:

EYE CONTACT:

May cause irritation, redness and pain.

INGESTION:

Not found to be toxic by oral exposure. May cause irritation of the digestive tract if ingested. Nausea, vomiting, diarrhea and transient disorientation may occur in the event that a large quantity has been ingested.

INHALATION:

Not expected to be toxic by inhalation. Urea dust may cause coughing and irritation of the nose, throat, and respiratory tract.

SKIN CONTACT: May cause irritation, redness and pain. Not expected to be toxic by dermal exposure.

CARCINOGEN STATUS:

OSHA: Not listed.

NTP: Not listed.

IARC: Not listed.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

POTENTIAL PHYSICAL:

Urea, when heated, decomposes to carbon dioxide and ammonia; if burned, emits small amounts of nitrogen oxides. Can cause redness and irritation of skin and eyes. While granules with either no odor or having a slight odor of ammonia (in the presence of moisture.)

***** IV – FIRST AID MEASURES *****

EYE CONTACT:

Immediately flush with large amount of water for at least 15 minutes, lifting lower and upper eyelids occasionally. If redness or irritation occurs, seek medical attention.

INGESTION:

Immediately rinse mouth and drink plenty of water. Induce vomiting. Seek medical attention if necessary.

INHALATION:

Non-volatile liquid. Remove person to fresh air. If breathing is difficult, give oxygen and get medical attention.

SKIN CONTACT:

Immediately remove contaminated clothing; wash the effected area with mild detergent and water. Flush area with water for at least 15 minutes. If redness or irritation occurs, seek medical attention.

NOTES TO PHYSICIAN: None



Mueller Sports Medicine, Inc.
 One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568
 EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

***** **V – FIRE FIGHTING MEASURES** *****

Nonflammable solution. Urea pellets, prior to mixing, are not flammable. Ammonium chloride is not flammable.

Special Firefighting Procedures: Fire fighters should use NIOSH approved self-contained breathing apparatus and full protective equipment when fighting chemical fires.

At elevated temperatures, urea forms hazardous decomposition products, including ammonia, cyanuric acid, biuret and nitrogen oxides. Refer to section X for details. Explosive on contact with halogens such as chlorine.

***** **VI – ACCIDENTAL RELEASE MEASURES** *****

Recover any reusable product, taking care not to generate excess dust. Wear appropriate protective equipment. Use caution as urea may be slippery when wet. Keep product out of sewage and drainage systems and all bodies of water. Clean up spills immediately. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of urea.

Small spills can be taken up with an absorbent and placed in clean dry containers for later disposal or use as a fertilizer.

This product is a nonhazardous waste when spilled or disposed of, as defined in resource conservation recovery act (RCRA) regulations (40 CFR 261).

***** **VII – HANDLING AND STORAGE** *****

HANDLING: The use of respiratory protection is advised when dust concentrations exceed any established exposure limits (See section VIII).

STORAGE: Urea will absorb moisture from the air. If storage piles become wet, surrounding floor may be slippery. Reacts with hypochlorides to form nitrogen trichloride, which explodes spontaneously in air. Reacts with nitric acid to form urea nitrate that decomposes explosively when heated.

***** **VIII – EXPOSURE CONTROLS / PERSONAL PROTECTION** *****

EYE PROTECTION:

Personal protective equipment is not normally required.

RESPIRATORY PROTECTION:

No respiratory protection is needed under normal conditions of handling and use, unless exposure standards are exceeded. Use appropriate respirators when adequate engineering and work practice controls are not technically feasible or when performing certain maintenance, repair or emergency operations where excessive exposure could occur.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION:

No skin protection is needed under normal conditions of handling and use.



Mueller Sports Medicine, Inc.

One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568

EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

VENTILATION:

No ventilation should be required under normal conditions of handling and use. Use process enclosure, general dilution ventilation or local exhaust systems, where necessary, to maintain airborne dust concentrations below the OSHA standard or other applicable regulations.

EXPOSURE GUIDELINES OR LIMITS:

Although standards for urea have not been established, the following nuisance dust standards are applicable.

ACGIH TLV: 10 mg/m³ – inhalable particulate
3 mg/m³ – respirable particulate

OSHA PEL: 15 mg/m³ TWA (total) (7)
5 mg/m³ TWA (respirable)

* TLV = Threshold Limit Values
PEL = Permissible Exposure Limits
TWA = 8-hour Time-weighted Average
STEL = 15-minute Short Term Exposure Limit

For ammonium chloride:

ACGIH TLV: 10 mg/m³ (TWA)
20 mg/m³ (STEL) fume.

******* IX – STABILITY AND REACTIVITY *******

STABILITY:

Stable under normal conditions.

HAZARDOUS POLYMERIZATION:

Not reported to occur under normal temperatures and pressures.

REACTIVITY:

Yes, instant cold upon mixing of ingredients. Ammonium nitrate pellets, prior to mixing, react violently with reducing agents, strong acids, powdered metals, and organic materials.

INCOMPATIBILITIES (SPECIFIC MATERIALS TO AVOID):

For the urea: nitric acid, sodium nitrite, nitrosyl perchlorate, gallium perchlorate, hypochlorites, phosphorous pentachloride.

For ammonium chloride: acids, strong bases, silver salts, potassium chlorate, ammonium nitrate, bromine trifluoride and iodine heptafluoride. Ammonium chloride reacts explosively with potassium chlorate or bromine trifluoride, and violently with bromine pentafluoride, ammonium compounds, nitrates and iodine heptafluoride. Explosive nitrogen trichloride may result from reaction of ammonium chloride and hydrogen cyanide.

DECOMPOSITION PRODUCTS:

When heated above the melting point for urea (270.8° F or 132.7° C) decomposes to ammonia and carbon dioxide. If burned, emits small amounts of nitrogen oxides from urea and hydrogen chloride and ammonia from the ammonium chloride.

******* X – TOXICOLOGICAL INFORMATION *******

ACUTE TOXICITY:

The following toxicology information if for PURE urea:

Oral LD50: Ranges from 11.5 g/kg (female mouse) to 15 g/kg (female rat)

LD50 Dermal: No data available.

Inhalation, Human: No data available. Urea dust at 22 mg/m³ caused mild irritation (species not specified).



Mueller Sports Medicine, Inc.

One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568

EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

SUBCHRONIC TOXICITY: In a repeated dose toxicity study, urea at 10%, 20% and 40% in ointment was applied to the back skin of rats for 4 weeks. No dose-dependent toxicity was observed. There were no consistent treatment-related effects on standard hematological parameters, clinical chemistry, organ weights or organ histopathology, including the testicles, prostate, seminal vesicles, ovaries, and the uterus.

CHRONIC TOXICITY: In a chronic toxicity and carcinogenicity screening study conducted in mice over 12 months, urea was administered at 0, 0.45%, 0.9% and 4.5% in the diet. No pathology was reported immediately following the treatment period. After 4 months, testes, prostate and uterus were histologically examined for occurrence of tumors in the survivors. Although there was a statistically increased incidence of interstitial cell adenomas of the testis in the high dose group, its biological significance was deemed questionable, since the lesion may occur in 100% of controls.

TERATOGENICITY: In a single oral dose study in mice, 2000 mg/kg administered on day 10 of pregnancy was not teratogenic. Urea in water was given in 2 doses 12 hours apart by gavage to rats during pregnancy for 14 days and the dams were allowed to deliver. No hypertrophy or other kidney changes were detected nor were any teratogenic effects noted. Urea caused developmental effects in chick embryos when injected into eggs.

MUTAGENICITY: Urea was negative in tests of bacterial mutagenicity and demonstrated low clastogenic potential in non-bacterial mutagenicity tests. Chromosome breakage has been observed in some laboratory tests using extremely high concentrations of urea. At near lethal doses, urea was mutagenic in in-vivo non-bacterial test in mice.

Urea is not recognized as a carcinogen by IARC, NTP or OSHA.

***** XI – ECOLOGICAL INFORMATION *****

Large amounts of urea can damage plant seedlings and inhibit germination. As a readily available source of nitrogen, urea can also foster excessive growth of algae or microorganisms in water systems.

Urea is non-toxic to aquatic organisms as defined by USEPA.

Fish 96 hour LC50: >9,100 mg/L
Daphnia 24 hour EC50: >10,000 mg/L

ENVIRONMENTAL INFORMATION: (UREA) The cell multiplication toxicity threshold values for bacteria, green algae and protozoa are >10,000, >10,000, and 29 Mg/L respectively. The critical range for the creek chub is 16,000 to 30,000 mg/L in Detroit river water.

ENVIRONMENTAL FATE INFORMATION: (UREA) Particulate-phase urea is physically washed out of the atmosphere by dry and wet deposition. In the soil, urea degrades rapidly, usually within 24 hours; however, degradation may be slower depending on soil type, moisture content and urea formulation. The ultimate degradation products are carbon dioxide and ammonia. The mobility is high based on an organic carbon partition coefficient of 8. In water, biodegradation to carbon dioxide and ammonia is a major fate pathway. The biodegradation rate increases with increasing temperature and presence of phytoplankton. Oxidation of urea by nitrifying bacteria can increase biological oxygen demand. Bioaccumulation of urea is very low. The 72-hour bioconcentration factor (BCF) for carp is reported to be 1.



Mueller Sports Medicine, Inc.
 One Quench Drive, Prairie du Sac, WI 53578 USA * (608) 643-8530 * Fax (608) 643-2568
 EMERGENCY RESPONSE TELEPHONE NO: 1-800-535-5053

***** **XII – DISPOSAL CONSIDERATIONS** *****

Urea is not considered a hazardous waste under Federal Hazardous Waste Regulations 40 CFR 261. Consult local, state and/or provincial environmental regulatory authorities for acceptable disposal procedures and locations.

***** **XIII – TRANSPORT INFORMATION** *****

Urea is not listed as a hazardous material by the U.S. Department of Transportation (DOT), Transport Canada (TC), International Maritime Organization (IMO), and the United Nations (UN).

***** **XIV – REGULATORY INFORMATION** *****

OSHA: Urea is considered to be hazardous as defined by the OSHA Hazard Communication Standard.
 CERLA: Urea does not contain Reportable Quantity substances.
 SARA TITLE III: No federal requirements. User should contact local and state regulatory agencies for information on additional or more stringent reporting requirements.

EHS: No	ACUTE: No	CHRONIC: No	FIRE: No.	PRESSURE: No.	REACTIVE: No.	313: No.
------------	--------------	----------------	--------------	------------------	------------------	-------------

Proposition 65: Not listed.
 Urea has not been identified as a carcinogen by NTP, IARC, or OSHA.