

RULER BLUE SOLUTION #3 **MATERIAL SAFETY DATA SHEET**
No. 133-144 & No. 133-500

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

NAME: RULER BLUE SOLUTION #3 SYN: COMBUSTION APPLICATIONS No. 133-144 & No. 133-500

COMPONENTS: REFERENCE: Formula/F.WT.
(1) Acetic acid, 2%
(2) Other non VOC, 10%
(3) Reagent alcohol, 88% 40 CFR 372.65
NFPA RATING (0-4): Health-1 Fire-3 Reactivity-0

SECTION III - PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling pt: Melting pt: Sp. gravity: Evaporation rate: Vapor press: Vapor density: pH:
n/a n/a <1 n/a n/a n/a slightly acidic

Appearance/Odor: clear, colorless liquid/alcoholic odor. Odor Threshold: 5-10ppm.

Solubility: water - soluble.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash pt: 57F (CC) Explosion level-lower(LEL): 4.3% -upper(UEL): 19% Autoignition: n/a

Extinguishing Media: dry chemical, carbon dioxide, water spray or alcohol foam.

Fire fighting: dangerous fire/negligible explosion hazard when exposed to heat or flame. Vapor-Air mixtures are explosive above the flash point. Vapors heavier than air, travel considerable distance and flash back from an ignition source. Move containers if possible, keep cool. Avoid breathing vapors.

SECTION V - REACTIVITY DATA

Stability: stable under normal temperatures and pressures.

Condition to Avoid: incompatibilities - reacts with acids, oxidizers.

Hazardous Decomposition/Byproducts: thermal decomposition may release toxic oxides of carbon, formaldehyde.

Hazardous Polymerization: not known to occur.

SECTION VI - HEALTH HAZARD DATA

Toxicity: acidic component -- LD50: 3310mg/Kg oral-rat; 1060mg/Kg skin-rabbit; LCLO: 1600ppm/4Hr inhalation-rat; mutagenic data (RTECS). Salt component -- LD50: 3250mg/Kg oral-rat. Solvent component -- an eye and respiratory tract irritant, central nervous system depressant. LDLO: 2000mg/Kg Oral-child; TDLO: 50mg/Kg Oral-man; 143ug/Kg Oral-man. Solvent component-- LDLO: 340mg/Kg Oral-human; 868mg/Kg Unk-man. LD50: 20mg/Kg

Skin-rabbit. Solvent component-- LDLO: 8600mg/Kg Oral-man; 2270mg/Kg Unk-man. TDLO: 15710mg/Kg Oral-human. LD50: 13gm/Kg Skin-rabbit. Mutagenic data (RTECS). Solvent component -- 470ppm/15min eye-human irritation; LCLO: 1700ppm/7hrs inhalation-cat.

Carcinogenicity: none classified by OSHA, IARC, NTP. A solvent component manufactured by a certain process is listed in group 1 by IARC. Workers manufacturing this component by this process showed increased sinus and laryngeal cancer.

Exposure Limits:

	OSHA-PEL:	ACGIH-TWA:	-STEL:	TLV CEILING:	IDLH:	OTHER:
Acidic comp.	10ppm	10ppm	15ppm	n/a	1000ppm	n/a
Salt comp.	n/a	n/a	n/a	n/a	n/a	n/a
Solvent comp.	1000ppm	1000ppm	n/a	n/a	3,300ppm	n/a
Solvent comp.	200ppm	200ppm	250ppm	n/a	6,000ppm	200ppm NIOSH-TWA
Solvent comp.	400ppm	400ppm	500ppm	n/a	2,000ppm	400ppm NIOSH-TWA
Solvent comp.	500ppm	100ppm	n/a	n/a	20,000mg/M3	n/a

Acute Health Hazards: acidic component-- may cause irritation to skin, eyes, mucous membranes, respiratory and gastrointestinal tracts. Salt component-- may cause irritation to eyes and skin. Solvent component-- may cause nasal irritation, cough; high levels cause feeling of suffocation, central nervous system depression (drunkenness). Solvent component-- may cause narcosis, CNS depression leading to respiratory/circulatory failure, pain, blindness, coma, kidney/liver damage, cyanosis, edema, death. Solvent component-- causes confusion, incoordination, vomiting, abdominal pain, uremia, many of the preceding symptoms. Eye contact can result in irritation, burns, corneal damage. Ingestion can be fatal, with symptoms of hypoglycemia, convulsions, shock, tachycardia, hypotension, vertigo, diplopia, pupil dilation. Solvent-- may cause irritation to eyes, skin, respiratory and digestive tracts. May cause nausea, vomiting.

Chronic Health Hazards: respiratory irritation, headache, central nervous system depression (somnia, lack of concentration), visual impairment. Dermatitis, conjunctivitis (with permanent or temporary visual impairment), optic neuritis, pain and atrophy. Weight loss, cirrhosis, gastroenteritis, amnesia, tremors, acute myopathy, muscular edema and degeneration occur from long term exposure.

First Aid:

Inhalation: move to fresh air immediately. If breathing has stopped, give artificial respiration. Get medical aid at once.

Skin: remove contaminated clothing, wash area with soap and large amounts of water (15-20min) until chemical is gone. Get medical aid at once.

Eyes: immediately flush eyes with large amounts of water (15-20min) lifting upper/lower lids occasionally until chemical is gone. For burns, apply loose sterile non-medicated bandages. Get medical aid at once.

Ingestion: remove by gastric lavage and emesis using tap water, warm water, or 3-5% sodium bicarbonate solution unless 2 or more hours have passed. Syrup of ipecac may be given promptly following ingestion. Get medical aid at once. Antidote: Naloxone, 0.01mg/Kg IV. (Dreisbach, Handbook of Poisoning, 11th.Ed.)

SECTION VII - PRECAUTION FOR SAFE HANDLING AND USE

Spills or Leaks: shut off ignition sources, ventilate area. Absorb with sand, diatomaceous earth, or other suitable inert material. Scoop into labeled container for disposal. Water may be used to reduce vapor hazard, clean area. Keep out of drains, sewers. Vapors may ignite or be explosive.

Disposal: dispose in accordance with Federal, State, and local regulations.

Storage and handling: store capped in suitable containers protected from heat and ignition sources. Store as flammable liquid in properly ventilated cabinet or area. Vapors may be explosive. Keep away from incompatible substances (strong oxidizers, acids).

SECTION VIII - CONTROL MEASURES

Respiratory Protection: provide local exhaust or general dilution ventilation to meet Permissible Exposure Limits (PEL). Respirators: not required for routine laboratory use. High Levels - CCROV/SA/SCBA. Fire fighting -SCBAF: PD, PP. (Respirator Codes: (NIOSH) Publication No. 78-210).

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Protective Clothing and Equipment: wear protective clothing, gloves, and splash-proof goggles. Provide an eye-wash fountain in the immediate work area. Do not wear contact lenses when working with chemicals.

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[Note: n/a means "not applicable" or data "not available", VOC means "Volatile Organic Compounds".]