



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name	Universal Indicator Solution	Product Code	VW5704
Manufacturer	EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.	Effective Date	9/15/2005
		Print Date	10/5/2005

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym None.

Material Uses Laboratory Reagent

Chemical Family Alcohol solution

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Isopropyl Alcohol	67-63-0	<44
Water	7732-18-5	>55
Sodium Hydroxide	1310-73-2	<1

+ Section 3. Hazards Identification

Physical State and Appearance Liquid.

Emergency Overview DANGER !
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF SWALLOWED.
CAUSES EYE AND SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Routes of Entry Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin.

Inhalation May be hazardous in case of inhalation (lung irritant).

Ingestion Hazardous in case of ingestion. Do not take internally.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions

Aggravated by Overexposure:

Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention 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. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

+ Section 5. Fire Fighting Measures

Flammability of the Product

Product will burn.

Auto-ignition Temperature

The lowest known value is 399.05°C (750.3°F) (Isopropyl Alcohol).

Flash Points

The lowest known value is Open cup: 11.9°C (53.4°F). (Isopropyl Alcohol)

Flammable Limits

Not available.

Products of Combustion

These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances

Highly flammable in presence of oxidizing materials.
Flammable in presence of open flames, sparks and static discharge, of shocks, of heat.

Explosion Hazards in Presence of Various Substances

Risks of explosion of the product in presence of static discharge:
Flammable in presence of open flames, sparks and static discharge.
Highly explosive in presence of open flames, sparks and static discharge.

Risks of explosion of the product in presence of mechanical impact:
Flammable in presence of shocks.
Highly explosive in presence of shocks.

Fire Fighting Media and Instructions

SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards

Vapor may travel considerable distance to source of ignition and flash back. (Isopropyl Alcohol)

Special Remarks on Explosion Hazards

Development of hazardous combustion gases or vapors possible in the event of fire.

+ Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill and Leak	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Spill Kit Information	The following EMD Chemicals Inc. SpillSolv (TM) absorbent is recommended for this product: SX1330 Solvent Treatment Kit

Section 7. Handling and Storage

Handling	Keep away from heat, sparks and flame. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

+ Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	
<i>Eyes</i>	Face shield.
<i>Body</i>	Full suit.
<i>Respiratory</i>	Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
<i>Hands</i>	Gloves.
<i>Feet</i>	Boots.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

Isopropyl Alcohol

Exposure Limits

BAUA (Germany, 1997).

Spitzenbegrenzung: 2000 mg/m³

TWA: 500 mg/m³ 8 hour(s).

DK-Arbejdstyilsinet (Denmark, 1996). Skin

GV: 490 mg/m³ 8 hour(s).

GV: 200 ppm 8 hour(s).

INRS (France, 1996).

VLE: 980 mg/m³ 15 minute(s).

VLE: 400 ppm 15 minute(s).

National Authority for Occupational Safety/Health (Ireland, 1999). Skin

STEL: 1225 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

OEL: 980 mg/m³ 8 hour(s).

OEL: 400 ppm 8 hour(s).

Arbeidsinspectie (Netherlands, 1999).

TGG 8 uur: 650 mg/m³ 8 hour(s).

TGG 8 uur: 250 ppm 8 hour(s).

N-Arbeidstilsynet (Norway, 1996).

AN: 245 mg/m³ 8 hour(s).

AN: 100 ppm 8 hour(s).

AFS (Sweden, 1996).

KTV: 600 mg/m³ 15 minute(s).

KTV: 250 ppm 15 minute(s).

NGV: 350 mg/m³ 8 hour(s).

NGV: 150 ppm 8 hour(s).

EH40-OES (United Kingdom (UK), 1997).

STEL: 1250 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

TWA: 999 mg/m³ 8 hour(s).

TWA: 400 ppm 8 hour(s).

ACGIH (United States, 1994).

STEL: 1230 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

TWA: 983 mg/m³ 8 hour(s).

TWA: 400 ppm 8 hour(s).

NIOSH REL (United States, 1994).

STEL: 1225 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

TWA: 980 mg/m³ 10 hour(s).

TWA: 400 ppm 10 hour(s).

OSHA Final Rule (United States, 1989).

STEL: 1225 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

TWA: 980 mg/m³ 8 hour(s).

TWA: 400 ppm 8 hour(s).

Not available.

ACGIH (United States).

CEIL: 2 mg/m³

OSHA (United States).

CEIL: 2 mg/m³

AUVA (Austria, 1995).

Spitzenbegrenzung: 4 mg/m³ 8 times per shift, 5 minute(s).

TWA: 2 mg/m³ 8 hour(s).

Belgium Minister of Labour (Belgium, 1998).

CEIL: 2 mg/m³

VL: 2 mg/m³ 8 hour(s).

BAUA (Germany, 1997).

Spitzenbegrenzung: 2 mg/m³

TWA: 2 mg/m³ 8 hour(s).

DK-Arbejdstilsynet (Denmark, 1996).

Loftværdi: 2 mg/m³

GV: 2 mg/m³ 8 hour(s).

Tyterveyslaitos (Finland, 1998).

TWA: 2 mg/m³ 8 hour(s).

INRS (France, 1996).

VME: 2 mg/m³ 8 hour(s).

National Authority for Occupational Safety/Health (Ireland, 1999).

STEL: 2 mg/m³ 15 minute(s).

Arbeidsinspectie (Netherlands, 1999).

MAC-C: 2 mg/m³

TGG 8 uur: 2 mg/m³ 8 hour(s).

N-Arbeidstilsynet (Norway, 1996).

AN: 2 mg/m³ 8 hour(s).

AFS (Sweden, 1996).

KTV: 2 mg/m³ 15 minute(s).

Water

Sodium Hydroxide

EH40-OES (United Kingdom (UK), 1997).

STEL: 2 mg/m³ 15 minute(s).

NIOSH REL (United States, 1994).

CEIL: 2 mg/m³

OSHA Final Rule (United States, 1989).

CEIL: 2 mg/m³

Section 9. Physical and Chemical Properties

Odor	Alcohol like.
Color	Dark Green
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	Not available.
Boiling/Condensation Point	The lowest known value is 82.55°C (180.6°F) (Isopropyl Alcohol). Weighted average: 92.27°C (198.1°F)
Melting/Freezing Point	May start to solidify at -0.1°C (31.8°F) based on data for: Water. Weighted average: -39.1°C (-38.4°F)
Specific Gravity	The only known value is 0.785 (Water = 1) (Isopropyl Alcohol).
Vapor Pressure	Not available.
Vapor Density	The highest known value is 2.07 (Air = 1) (Isopropyl Alcohol).
Odor Threshold	Not available.
Evaporation Rate	The highest known value is 1.7 (Isopropyl Alcohol) Weighted average: 0.95 compared to (n-Butyl Acetate =1)
LogK_{ow}	Not available.
Solubility	Soluble in water.

+ Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Highly reactive with oxidizing agents.
Rem/Incompatibility	Incompatible with aldehydes, aluminum, phosgene, and halogens.
Hazardous Decomposition Products	CO _x
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Isopropyl Alcohol Water Sodium Hydroxide	NT8050000 ZC0110000 WB4900000
Toxicity	Acute oral toxicity (LD ₅₀): 3600 mg/kg [Mouse]. (Isopropyl Alcohol). Acute dermal toxicity (LD ₅₀): 12800 mg/kg [Rabbit]. (Isopropyl Alcohol).	

Chronic Effects on Humans Not available.

Acute Effects on Humans Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin. May be hazardous in case of inhalation (lung irritant). Hazardous in case of ingestion.

Synergetic Products (Toxicologically) Not available.

Irritancy Draize Test: Not available.

Sensitization Not available.

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System Not available.

Teratogenic Effects Not available.

Mutagenic Effects Not available.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Toxicity of the Products of Biodegradation The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number D001 D002

Treatment Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact permitted waste disposer (TSD) to assure compliance with all Current local, State and Federal Regulations.

Section 14. Transport Information

DOT Classification Proper Shipping Name: FLAMMABLE LIQUIDS,
N.O.S. (ISOPROPANOL)
Hazard Class: 3
UN number: UN1993
Packing Group: II
RQ: Not applicable.



TDG Classification Not available.

IMO/MDG Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 4(a) final test rules: Isopropyl Alcohol
TSCA 8(b) inventory: Isopropyl Alcohol; Water; Sodium Hydroxide
TSCA 8(d) H and S data reporting: Isopropyl Alcohol: 1986
TSCA 12(b) one time export: Isopropyl Alcohol
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Isopropyl Alcohol; Sodium Hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Isopropyl Alcohol:
Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Sodium
Hydroxide: Immediate (Acute) Health Hazard
SARA 313 toxic chemical notification and release reporting: Isopropyl Alcohol 43.56%
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Sodium Hydroxide
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
Class D-2B: Material causing other toxic effects (TOXIC).
CEPA DSL: Isopropyl Alcohol; Water; Sodium Hydroxide
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Isopropyl Alcohol 200-661-7
Water 231-791-2
Sodium Hydroxide 215-185-5

DSCL (EEC) R38- Irritating to skin.
R41- Risk of serious damage to eyes.

International Lists Australia (NICNAS): Isopropyl Alcohol; Water; Sodium Hydroxide
Japan (MITI): Isopropyl Alcohol; Water; Sodium Hydroxide
Japan (MOL): Isopropyl Alcohol
Korea (TCCL): Isopropyl Alcohol; Water; Sodium Hydroxide
Philippines (RA6969): Isopropyl Alcohol; Water; Sodium Hydroxide
China: No products were found.

State Regulations

Pennsylvania RTK: Isopropyl Alcohol: (environmental hazard, generic environmental hazard);
Sodium Hydroxide: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Isopropyl Alcohol; Sodium Hydroxide
New Jersey: Universal Indicator
California prop. 65: No products were found.

Section 16. Other Information

National Fire
Protection
Association
(U.S.A.)



Changed Since Last
Revision



Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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