

KM003

9752

Nasco



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### MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY ASSISTANCE		GENERAL MSDS ASSISTANCE	
CHEMTREC: 800-424-9300			
ACUTE HEALTH +	FLAME F	REACTIVITY R	HAZARD RATING
2	3	0	LEAST - 0 LIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4
*For acute and chronic health effects refer to the discussion in Section III			



**SECTION I: PRODUCT IDENTIFICATION**

PRODUCT: ISOPROPYL ALCOHOL

CHEMICAL NAME: IPA, ISOPROPANOL, 2-PROPANOL

CHEMICAL FAMILY: ALCOHOL

**SECTION II-A**

NO.	PRODUCT/INGREDIENT COMPOSITION	CAS NUMBER	PERCENT
1	ISOPROPYL ALCOHOL (IPA)	67-63-0	100

**SECTION II-B**

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
1	5840 MG/KG (RAT)	13000 MG/KG (RABBIT)	12000 PPM (RAT) 8 HRS

**SECTION III** HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**EYE CONTACT**  
MODERATELY IRRITATING TO THE EYES.

**SKIN CONTACT**  
MILDLY IRRITATING TO THE SKIN.

**INHALATION**  
MAY CAUSE MILD IRRITATION TO THE NOSE, THROAT AND RESPIRATORY TRACT AND MAY RESULT IN CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION.

**INGESTION**  
IRRITATING TO THE GASTROINTESTINAL TRACT, CAUSING ABDOMINAL PAIN AND VOMITING. SOMETIMES BLOODY. INGESTION MAY CAUSE CNS DEPRESSION, LOW BLOOD PRESSURE, RAPID HEART BEAT AND LIVER DAMAGE.

**SIGNS AND SYMPTOMS**  
IRRITATION AS NOTED ABOVE. EARLY TO MODERATE CNS (CENTRAL NERVOUS SYSTEM) DEPRESSION MAY BE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS AND NAUSEA; IN EXTREME CASES, UNCONSCIOUSNESS. RESPIRATORY DEPRESSION AND DEATH MAY OCCUR. LIVER DAMAGE MAY BE EVIDENCED BY LOSS OF APPETITE, JAUNDICE (YELLOWISH SKIN COLOR) AND SOMETIMES PAIN IN THE UPPER ABDOMEN ON THE RIGHT SIDE.

PRODUCT NAME: ISOPROPYL ALCOHOL

MSDS  
PAGE 2

AGGRAVATED MEDICAL CONDITIONS  
PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.  
IMPAIRED FUNCTION FROM PREEXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

SEE SECTION VI FOR ADDITIONAL HEALTH INFORMATION.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS						
NO.	PEL/TWA	OSHA		ACGIH TLV/TWA	TLV/STEL	OTHER
		DEL/CEILING	TLV/TWA			
1	400 PPM			400 PPM	500 PPM	500 PPM*

50% ODOR RECOGNITION THRESHOLD IS 7.5 PPM. \*OSHA PEL/STEL.

## SECTION V EMERGENCY AND FIRST AID PROCEDURES

**EYE CONTACT**  
IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN.  
GET MEDICAL ATTENTION.

**SKIN CONTACT**  
FLUSH SKIN WITH WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

**INHALATION**  
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

**INGESTION**  
DO NOT GIVE LIQUIDS IF VICTIM IS UNCONSCIOUS OR VERY DROWSY. OTHERWISE, GIVE NO MORE THAN 2 GLASSES OF WATER AND INDUCE VOMITING BY GIVING 30CC (2 TABLESPOONS) SYRUP OF IPECAC.\* IF IPECAC IS UNAVAILABLE, GIVE 2 GLASSES OF WATER AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF VICTIM'S THROAT. KEEP VICTIM'S HEAD BELOW HIPS WHILE VOMITING. GET MEDICAL ATTENTION.

## NOTE TO PHYSICIAN

\*IF VICTIM IS A CHILD, GIVE NO MORE THAN 1 GLASS OF WATER AND 15CC (1 TABLESPOON) SYRUP OF IPECAC.  
IF SYMPTOMS SUCH AS LOSS OF GAG REFLEX, CONVULSIONS OR UNCONSCIOUSNESS OCCUR BEFORE EMESIS, GASTRIC LAVAGE SHOULD BE CONSIDERED FOLLOWING INTUBATION WITH A CUFFED ENDOTRACHEAL TUBE.

## SECTION VI SUPPLEMENTAL HEALTH INFORMATION

IPA: IN RESPONSE TO A TSCA TEST RULE, SEVERAL STUDIES OF IPA HAVE NOW BEEN COMPLETED. THE STUDIES AND THEIR RESULTS ARE AS FOLLOWS 1) BOTH MUTAGENICITY STUDIES, THE MOUSE MICRONUCLEUS AND CHO ASSAYS, WERE NEGATIVE. 2) RAT AND RABBIT ORAL TERATOGENICITY AND DEVELOPMENTAL TOXICOLOGY: A) THERE WAS NO EVIDENCE THAT IPA CAUSED TERATOGENICITY IN RATS OR RABBITS. B) DEVELOPMENTAL TOXICITY WAS SEEN IN RATS AT 1200 MG/KG (EVIDENCED BY DECREASED BODY WEIGHT\*\*) WHILE NO DEVELOPMENTAL TOXICITY WAS SEEN IN THE RABBIT STUDY. FOR RATS, THE NOAEL WAS 400 MG/KG; FOR RABBITS, 280 MG/KG. THIS WORK ALSO IDENTIFIED PREGNANT RABBITS TO BE APPROXIMATELY EIGHT TIMES MORE SENSITIVE TO IPA'S LETHAL EFFECTS THAN NON-PREGNANT RABBITS--.

OTHER TEST RULE RELATED STUDIES: 3) RAT DRAL REPRODUCTIVE TOXICITY: IN THE RAT REPRODUCTIVE TOXICITY STUDY, THE NOAEL FOR REPRODUCTION INDICES WAS 1000 MG/KG. HOWEVER, THERE WAS A MARKED INCREASE IN POST-WEANING PUP MORTALITY AT THIS LEVEL--; THE NOAEL FOR THIS EFFECT WAS 500 MG/KG. ALSO, THE NOAEL FOR PARTENTIAL FEMALE BODY WEIGHT DECREASE WAS 100 MG/KG. 4) IN RAT INHALATION AND ORAL DEVELOPMENTAL NEUROTOXICITY STUDIES, THERE WAS NO EVIDENCE THAT IPA CAUSED NEUROTOXICITY IN ADULTS (MAX DOSE 5000 PPM) OR OFFSPRING (MAX DOSE 1200 MG/KG). 5) SUBCHRONIC RAT AND MOUSE INHALATION TOXICITY: THE SUBCHRONIC NOAEL WAS 500 PPM BASED ON CLINICAL SIGNS OF CNS DEPRESSION (BOTH SPECIES) AND INCREASED BODY WEIGHT AND BLOOD EFFECTS (RAT ONLY) SEEN AT 1500 PPM. (NOTE: THE INFORMATION TAGGED BY "\*" ABOVE WERE SUBMITTED TO EPA UNDER THE REQUIREMENTS OF TSCA 8(E).)

PRODUCT NAME: ISOPROPYL ALCOHOL

MSDS PAGE 3

SECTION VII PHYSICAL DATA

BOILING POINT: 100 (DEG F)	SPECIFIC GRAVITY: 0.79 (H2O=1)	VAPOR PRESSURE: 32 @ 68 DEG (MM HG)
MELTING POINT: -127 (DEG F)	SOLUBILITY: COMPLETE (IN WATER)	VAPOR DENSITY: 2.1 (AIR=1)
EVAPORATION RATE (N-BUTYL ACETATE = 1): 1.4		VOC: 100% @ 6.51 LB/GAL

APPEARANCE AND ODOR: COLORLESS, MOBILE LIQUID. MILD ODOR.

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD: 53 DEG F -TCC	FLAMMABLE LIMITS /% VOLUME IN AIR LOWER: 2 UPPER: 12
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EXTINGUISHING MEDIA USE WATER FOG, "ALCOHOL" FOAM, DRY CHEMICAL OR CO2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS WARNING. FLAMMABLE. CLEAR FIRE AREA OF UNPROTECTED PERSONNEL. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS). INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

SECTION IX REACTIVITY

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID: AVOID HEAT, SPARKS, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS. DO NOT STORE OR HANDLE IN ALUMINUM EQUIPMENT AT TEMPERATURES ABOVE 120 DEG. F.

HAZARDOUS DECOMPOSITION PRODUCTS CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

OF THIS PRODUCT. REFER TO 29 CFR 1910.1000 FOR THESE TRANSITIONAL LIMITS AND REQUIREMENTS FOR MEETING THESE LIMITS.

**PROTECTIVE CLOTHING**  
AVOID CONTACT WITH EYES. WEAR CHEMICAL GOGGLES IF THERE IS LIKELIHOOD OF CONTACT WITH EYES. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR CHEMICAL-RESISTANT GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVES AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE, NEOPRENE AND NATURAL RUBBER GLOVES.

**ADDITIONAL PROTECTIVE MEASURES**  
USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE FOR EMERGENCY USE.

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**SECTION XI**

**ENVIRONMENTAL PROTECTION**  
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**SPILL OR LEAK PROCEDURES**

WARNING. FLAMMABLE. ELIMINATE ALL IGNITION SOURCES. HANDLING EQUIPMENT MUST BE GROUNDED TO PREVENT SPARKING. \*\*\* LARGE SPILLS \*\*\* EVACUATE THE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. IF VAPOR CLOUD FORMS, WATER FOG MAY BE USED TO SUPPRESS; CONTAIN RUN-OFF. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTIONS AS ABOVE. \*\*\* SMALL SPILLS \*\*\* TAKE UP WITH AN ABSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS; SEAL TIGHTLY FOR PROPER DISPOSAL.

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**SECTION XII**

**SPECIAL PRECAUTIONS**  
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KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS AND FLAME. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE EVEN LIQUID PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER SOURCES OF IGNITION PRIOR TO USE AND UNTIL ALL VAPORS ARE GONE.

VAPORS MAY ACCUMULATE AND TRAVEL TO IGNITION SOURCES DISTANT FROM THE HANDLING SITE; FLASH-FIRE CAN RESULT. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION. CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN EXPLOSIVE VAPORS. DO NOT CUT, DRILL, GRIND, WELD OR PERFORM SIMILAR OPERATIONS ON OR NEAR CONTAINERS. DO NOT PRESSURIZE DRUM CONTAINERS TO EMPTY THEM. STATIC ELECTRICITY MAY ACCUMULATE AND CREATE A FIRE HAZARD. GROUND FIXED EQUIPMENT. BOND AND GROUND TRANSFER CONTAINERS AND EQUIPMENT.

WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDRER CONTAMINATED CLOTHING BEFORE REUSE. AIR-DRY CONTAMINATED CLOTHING IN A WELL VENTILATED AREA BEFORE LAUNDERING.

DO NOT STORE OR HANDLE IN ALUMINUM EQUIPMENT AT TEMPERATURES ABOVE 120 DEG. F.

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**SECTION XIII**

**TRANSPORTATION REQUIREMENTS**  
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DEPARTMENT OF TRANSPORTATION CLASSIFICATION:  
FLAMMABLE LIQUID

D.O.T. PROPER SHIPPING NAME:  
ISOPROPANOL

OTHER REQUIREMENTS:  
DOT ID NUMBER = UN 1219 - GUIDE SHEET 26

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**SECTION XIV**

**OTHER REGULATORY CONTROLS**  
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THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.  
IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

PRODUCT NAME: ISOPROPYL ALCOHOL

MSDS  
PAGE 5

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 SECTION XV STATE REGULATORY INFORMATION  
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THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
ISOPROPYL ALCOHOL (CAS NO: 67-63-0 )	100	CA, FL, IL, MA, ME, MN, NJ, PA, RI

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; MN = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

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 SECTION XVI SPECIAL NOTES  
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SEE ENVIRONMENTAL DATA SHEET FOR WASTE DISPOSAL AND OTHER ENVIRONMENTAL INFORMATION. THIS MSDS REVISION HAS CHANGES IN SECTIONS III, VI, XIV, AND XV.

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DATE PREPARED: December 4, 1991  
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BE SAFE  
 READ OUR PRODUCT  
 SAFETY INFORMATION ...AND PASS IT ON  
 (PRODUCT LIABILITY LAW  
 REQUIRES IT)