

ISSUE DATE: MARCH 1998

SUPERSEDES ANY PREVIOUS VERSIONS

PRODUCT IDENTIFICATION

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OTHER NAMES:

APC-10 - INDUSTRIAL CLEANER AND DEGREASER

UN NUMBER: NOT REQUIRED

DANGEROUS GOOD CLASS: NONHAZARDOUS

HAZARD RATING (NFPA/HMIS):       0           RATING SCALE:  
HEALTH = 1\* REACTIVITY = 0   1   0       0=MINIMAL   1=SLIGHT  
FIRE = 0   SPECIAL = 0       0       2=MODERATE 3=SERIOUS 4=SEVERE

\* MILD EYE IRRITANT, NON-MUTAGENIC AND NON-CARCINOGENIC. NONE OF THE INGREDIENTS IN APC-10(R) ARE REGULATED OR LISTED AS POTENTIAL CANCER AGENTS BY FEDERAL OSHA, NTP, OR IARC.

USE: AN ALL PURPOSE CLEANER AND DEGREASER USED UNDILUTED IN WATER FOR DIRECT, SPRAY, AND DIP TANK PROCEDURES.

SAFE HANDLING INFORMATION

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FIRE/EXPLOSION HAZARD:

APC-10(R) IS NONFLAMMABLE, STABLE, AND WILL NOT BURN.

FLASH POINT/AUTO-IGNITION: NOT RELEVANT

EXTINGUISHING MEDIA: NONFLAMMABLE/NONEXPLOSIVE. NO SPECIAL PROCEDURES REQUIRED.

SPECIAL FIRE FIGHTING PROCEDURES: NONE REQUIRED

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REACTIVITY DATA:

NONREACTIVE. APC-10 IS STABLE, EVEN UNDER FIRE CONDITIONS, AND WILL NOT REACT WITH WATER OR OXIDIZERS. HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

STORAGE AND TRANSPORT:

NO SPECIAL PRECAUTIONS ARE REQUIRED. THIS PRODUCT IS NON-HAZARDOUS FOR STORAGE AND TRANSPORT ACCORDING TO THE U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS.

APC-10 REQUIRES NO SPECIAL LABELING OR PLACARDING TO MEET U.S. DEPARTMENT OF TRANSPORTATION REQUIREMENTS.

SPILLS AND DISPOSAL:

SPILL OR LEAKAGE: RECOVER USABLE MATERIAL BY CONVENIENT METHOD: RESIDUAL MAY BE REMOVED BY WIPE OR WET MOP.

PROCEDURES: IF NECESSARY, UNRECOVERABLE MATERIAL MAY BE WASHED TO DRAIN WITH LARGE QUANTITIES OF WATER.

WASTE DISPOSAL: APC-10 IS FULLY WATER SOLUBLE AND BIO DEGRADABLE AND WILL NOT HARM SEWAGE-TREATMENT MICROORGANISMS IF DISPOSAL BY SEWER OR DRAIN IS NECESSARY. DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.

#### PRECAUTIONS FOR USE

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EXPOSURE LIMITS: APC-10 FORMULATION PRESENTS NO HEALTH HAZARDS TO THE USER, OTHER THAN MILD EYE IRRITANCY.

VENTILATION: NO SPECIAL VENTILATION IS REQUIRED DURING USE.

#### PERSONAL PROTECTION:

PRECAUTIONARY MEASURES: NO SPECIAL REQUIREMENTS UNDER NORMAL USE CONDITIONS.

EYE PROTECTION: CAUTION, INCLUDING REASONABLE EYE PROTECTION, SHOULD ALWAYS BE USED TO AVOID EYE CONTACT WHERE SPLASHING MAY OCCUR.

SKIN PROTECTION: NO SPECIAL PRECAUTIONS REQUIRED.

RESPIRATORY PROTECTION: NO SPECIAL PRECAUTIONS REQUIRED.

WORK AND HYGIENIC PRACTICES: NO SPECIAL REQUIREMENTS. WASH OR RINSE HANDS BEFORE TOUCHING EYES OR CONTACT LENSES.

#### SYMPTOMS OF OVEREXPOSURE AND FIRST AID TREATMENT:

EYE CONTACT: REDDENING MAY DEVELOP. IMMEDIATELY RINSE THE EYE WITH LARGE QUANTITIES OF COOL WATER; CONTINUE 10-15 MINUTES OR UNTIL THE MATERIAL HAS BEEN REMOVED; BE SURE TO REMOVE CONTACT LENSES, IF PRESENT, AND TO LIFT UPPER AND LOWER LIDS DURING RINSING. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN CONTACT: MINIMAL EFFECTS, IF ANY; RINSE SKIN WITH WATER, RINSE SHOES AND LAUNDRY CLOTHING BEFORE REUSE. REVERSIBLE REDDENING MAY OCCUR IN SOME DERMAL-SENSITIVE USERS; THOROUGHLY RINSE AREA AND GET MEDICAL ATTENTION IF REACTION PERSISTS.

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SWALLOWING: ESSENTIALLY NON-TOXIC. GIVE SEVERAL GLASSES OF WATER TO DILUTE; DO NOT INDUCE VOMITING. IF STOMACH UPSET OCCURS, CONSULT PHYSICIAN.

INHALATION: NON-TOXIC. EXPOSURES TO CONCENTRATE-MIST MAY CAUSE MILD IRRITATION OF NASAL PASSAGES OR THROAT; REMOVE TO FRESH AIR. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

#### INGREDIENT INFORMATION

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THE ONLY INGREDIENT OF APC-10 WITH ESTABLISHED EXPOSURE LIMITS IS UNDILUTED 2-BUTOXYETHANOL (<6%)(BUTYL CELLOSOLVE; CAS NO. 111-76-2): THE OSHA PEL AND ACGIH TLV IS 25 PPM (SKIN).

NOTE: HOWEVER, THAT BUTYL CELLOSOLVE IS ONLY ONE OF THE RAW MATERIAL INGREDIENTS THAT UNDERGO PROCESSING AND DILUTION DURING THE MANUFACTURE OF

APC-10. UPON COMPLETION OF THE MANUFACTURING PROCESS, APC-10 DOES NOT POSSESS THE OCCUPATIONAL HEALTH RISKS ASSOCIATED WITH EXPOSURE TO UNDILUTED BUTYL CELLOSOLVE. VERIFICATION OF THIS IS CONTAINED IN THE INDEPENDENT TEST RESULTS DETAILED UNDER "TOXICITY INFORMATION" ON PAGE 3 OF THIS MSDS.

THE BUTYL CELLOSOLVE IN APC-10 IS A PART OF A CHEMICAL CATEGORY (GLYCOL ETHERS) REGULATED BY THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (SARA, TITLE III, SECTION 313): THEREFORE, A REPORTING REQUIREMENT EXISTS. BASED UPON CHEMICAL ANALYSIS, APC-10 CONTAINS NO KNOWN EPA PRIORITY POLLUTANTS, HEAVY METALS, OR CHEMICALS LISTED UNDER RCRA, CERCLA, OR CWA. ANALYSIS BY TCLP (TOXICITY CHARACTERISTIC LEACHING PROCEDURE) ACCORDING TO RCRA REVEALED NO TOXIC ORGANIC OR INORGANIC CONSTITUENTS.

#### TOXICITY INFORMATION

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HUMAN HEALTH EFFECTS OR RISKS FROM EXPOSURE:  
ADVERSE EFFECTS ON HUMAN HEALTH ARE NOT EXPECTED FROM APC-10 BASED UPON SEVENTEEN YEARS OF USE WITHOUT REPORTED ADVERSE HEALTH INCIDENCE IN DIVERSE POPULATION GROUPS.

APC-10 IS A MILD EYE IRRITANT; MUCOUS MEMBRANES MAY BECOME IRRITATED BY CONCENTRATE-MIST.

APC-10 IS NOT LIKELY TO IRRITATE SKIN IN THE MAJORITY OF USERS. REPEATED DAILY APPLICATION TO THE SKIN WITHOUT RINSING, OR CONTINUOUS CONTACT OF APC-10(R) ON THE SKIN MAY LEAD TO TEMPORARY, BUT REVERSIBLE, IRRITATION.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:  
NO AGGRAVATION OF EXISTING MEDICAL CONDITIONS IS EXPECTED; DERMAL-SENSITIVE USERS MAY REACT TO DERMAL CONTACT BY APC-10.

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NONHUMAN TOXICITY:  
ACUTE MORTALITY STUDIES:  
ORAL LD50 (RAT): >5.0 G/KG BODY WEIGHT  
DERMAL LD50 (RABBIT): >2.0 G/KG BODY WEIGHT

DERMAL IRRITATION: ONLY MILD, BUT REVERSIBLE, IRRITATION WAS FOUND IN A STANDARD 72-HR TEST ON RABBITS. A VALUE OF 0.2 (NON-IRRITATING) WAS FOUND ON A SCALE OF 8.

EYE IRRITATION: WITH OR WITHOUT RINSING WITH WATER, THE IRRITATION SCORES IN RABBITS AT 24 HOURS DID NOT EXCEED 15 (MILD IRRITANT) ON A SCALE OF 110.

SUBCHRONIC DERMAL EFFECTS: NO ADVERSE EFFECTS, EXCEPT REVERSIBLE DERMAL IRRITATION, WERE FOUND IN RABBITS EXPOSED TO APC-10 (UP TO 2.0 G/KG/DAY

FOR 13 WEEKS) APPLIED TO THE SKIN OF 24 MALES AND 25 FEMALES. ONLY FEMALE BODY WEIGHT GAIN WAS AFFECTED. DETAILED MICROSCOPIC EXAMINATION OF ALL MAJOR TISSUES SHOWED NO ADVERSE CHANGES.

FERTILITY ASSESSMENT BY CONTINUOUS BREEDING: THE APC-10 FORMULATION HAS NO ADVERSE EFFECT ON FERTILITY AND REPRODUCTION IN CD-1 MICE WITH CONTINUOUS ADMINISTRATION FOR 18 WEEKS, AND HAD NO ADVERSE EFFECT ON THE REPRODUCTIVE PERFORMANCE OF THEIR OFFSPRING.

#### BIODEGRADABILITY AND ENVIRONMENTAL TOXICITY INFORMATION

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##### BIODEGRADABILITY:

APC-10 IS READILY DECOMPOSED BY NATURALLY OCCURRING MICROORGANISMS. THE BIOLOGICAL OXYGEN DEMAND (BOD), AS A PERCENTAGE OF THE CHEMICAL OXYGEN DEMAND (COD), AFTER 4.7 AND 11 DAYS WAS 56%, 60%, AND 70% RESPECTIVELY.

IN A STANDARD BIODEGRADATION TEST WITH SOILS FROM THREE DIFFERENT COUNTRIES. BUTYL CELLOSOLVE REACHED 50% DEGRADATION IN SIX TO 23 DAYS, DEPENDING UPON SOIL TYPE, AND EXCEEDED THE RATE OF DEGRADATION FOR GLUCOSE WHICH WAS USED AS A CONTROL FOR COMPARISON.

##### ENVIRONMENTAL TOXICITY INFORMATION:

APC-10 IS NONTOXIC TO ANY OF THE FOLLOWING MARINE AND ESTUARINE TEST ANIMALS AT CONCENTRATIONS BELOW 200 MG/L (0.02%). THE APC-10 CONCENTRATIONS THAT ARE LIKELY TO BE LETHAL TO 50% OF THE EXPOSED ORGANISMS ARE SUMMARIZED IN THE FOLLOWING TABLE:

	LC50 IN MG/L (PPM)	
	48-HOUR	96-HOUR
MARINE FISH:		
MUD MINNOW (FUNDULUS HETEROCLITUS)	1690	1574
WHITEBAIT (GALAXIAS MACULATUS)	210	210
MARINE/ESTUARINE INVERTEBRATES:		
BRINE SHRIMP (ARTEMIA SALINA)	610	399
GRASS SHRIMP (PALAEMONETES PUGIO)	270	220
GREEN-LIPPED MUSSEL (PERNACANALICULUS)	220	220
MUDSNAIL (POTAMOPYRGUS ESTUARINUS)	410	350

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#### OTHER INFORMATION

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##### PHYSICAL DESCRIPTION AND PROPERTIES:

APPEARANCE/ODOR: TRANSLUCENT GREEN LIQUID WITH CHARACTERISTIC LEMON ODOR.

BOILING POINT: 110 C (231 F)

FREEZING POINT: -9 C (16 F)

SPECIFIC GRAVITY: 1.0257

PH: 10.5

VAPOR DENSITY: 1.3 (AIR=1)

VOLATILE ORGANIC COMPOUNDS: 16 G/L

FLASH POINT: NONFLAMMABLE

FLAMMABILITY LIMITS: NONFLAMMABLE

VAPOR PRESSURE: 17 MM HG @ 20 C

22 MM HG @ 25 C

VOC COMPOSITE PARTIAL PRESSURE: 0.006 MM HG @ 20 C

WATER SOLUBILITY: COMPLETELY SOLUBLE IN WATER. THE HIGHER SALT CONCENTRATIONS IN MARINE ECOSYSTEMS WILL LEAD TO COMPLEXES WITH APC-10 THAT MAY BECOME VISIBLE AT RATIOS ABOVE ONE PART APC-10 TO 99 PARTS SEAWATER.

DETECTION: APC-10 HAS A CHARACTERISTIC LEMON ODOR THAT IS NOT INDICATIVE OF ANY HAZARDOUS SITUATION.

ADDITIONAL DATA:

ASH CONTENT: AT 600 F: 1.86% BY WEIGHT.

NUTRIENT CONTENT:

NITROGEN: <1.0% BY WEIGHT (FUSION AND QUALITATIVE TEST FOR AMMONIA).

PHOSPHORUS: 0.3% BY FORMULA.

SULFUR: 0.6.% BY WEIGHT (BARIUM CHLORIDE PRECIPITATION METHOD).

GENERAL INFORMATION:

CONTAINERS: APC-10 RESIDUES CAN BE COMPLETELY REMOVED BY RINSING WITH WATER; THE CONTAINER MAY BE RECYCLED OR APPLIED TO OTHER USES.

ELECTRICAL WIRING COMPATIBILITY: POLYIMIDE INSULATED WIRING IS NOT AFFECTED BY EXPOSURE TO APC-10 AFTER IMMERSION IN APC-10 FOR 14 DAYS AT 74 F, THE 61 CM PIECE OF POLYIMIDE INSULATED WIRE PASSED A ONE MINUTE DIELECTRIC PROOF TEST AT 2500 VOLTS (ASTMD-149).

NOTICE:

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