



BETZ PROCESS
CHEMICALS, INC.

P.O. BOX 4300
The Woodlands, Texas 77387
(713) 367-2442

CS738

MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) (215) 355-3300

DISTRIBUTED: AUG-29-1990

PRODUCT : PROCHEM 3F33

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EFFECTIVE DATE 08-06-90
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PRODUCT APPLICATION : AN OIL BASED ANTIFOULANT.

-----SECTION 1-----HAZARDOUS INGREDIENTS-----

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD ARE LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

HEAVY AROMATIC NAPHTHA;***CAS#64742-06-9;COMBUSTIBLE LIQUID;IRRITANT(EYE);
MANUFACTURERS SUGGESTED EXPOSURE LIMIT:100PPM;PEL:NONE;TLV:NONE.

TRADE SECRET INGREDIENT(190);COMBUSTIBLE;EYE IRRITANT;PEL:NONE;TLV:NONE.
TSRN 125438 - 5231P

TRADE SECRET INGREDIENT(108);COMBUSTIBLE LIQUID;IRRITANT(EYE AND SKIN);
PEL:NONE;TLV:NONE. TSRN 125438 - 5210P

-----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: 50% EXTRACT (APPROX.) 12.2	ODOR: HYDROCARBON
FL.PT.(DEG.F): 145 P-M(CC)	SP.GR.(70F)OR DENSITY: 7.4LBS/GAL
VAPOR PRESSURE(mmHG): <10	VAPOR DENSITY(AIR=1): >1
VISC cps70F: 18	%SOLUBILITY(WATER): 0
EVAP.RATE: ND WATER=1	APPEARANCE: YELLOW
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): -15

-----SECTION 3-----REACTIVITY DATA-----

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK
CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

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-----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE

SEVERE IRRITANT TO THE SKIN

ACUTE EYE EFFECTS ***

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS ***

IRRITATION OF UPPER RESPIRATORY TRACT. PROLONGED EXPOSURE MAY CAUSE

DIZZINESS AND HEADACHE

CHRONIC EFFECTS OF OVEREXPOSURE***

PROLONGED OR REPEATED EXPOSURES MAY CAUSE DEFATTING-TYPE DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED ***

NOT KNOWN

SYMPTOMS OF EXPOSURE ***

DERMAL EXPOSURES WILL DEFAT AND DRY SKIN AND CAUSE SEVERE SKIN IRRITATION;

INHALATION OF VAPORS/MISTS/AEROSOLS CAUSES EYE AND RESPIRATORY

IRRITATION, DIZZINESS, HEADACHE, NAUSEA.

-----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT***

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH A LARGE QUANTITY OF

SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A

PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR. APPLY APPROPRIATE

FIRST AID TREATMENT AS NECESSARY

INGESTION***

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM

DO NOT INDUCE VOMITING. IMMEDIATELY CONTACT PHYSICIAN. DILUTE CONTENTS OF

STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----

SPILL INSTRUCTIONS***

VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB

ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE

CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL,

SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

REMOVE IGNITION SOURCES. FLUSH AREA WITH WATER. SPREAD

SAND/GRIT.

DISPOSAL INSTRUCTIONS***

WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY

SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A

PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

PRODUCT (AS IS) -

INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING

APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

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-----SECTION 7-----SPECIAL PROTECTIVE EQUIPMENT-----
USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE
RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.
VENTILATION PROTECTION***

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS
RECOMMENDED RESPIRATORY PROTECTION***

IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY,
USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.

RECOMMENDED SKIN PROTECTION***

NEOPRENE GLOVES

WASH OFF AFTER EACH USE. REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***

SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----
STORAGE INSTRUCTIONS***

KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.

STORE IN COOL VENTILATED LOCATION. STORE AWAY FROM OXIDIZERS

HANDLING INSTRUCTIONS***

COMBUSTIBLE. DO NOT USE AROUND SPARKS OR FLAMES. BOND CONTAINERS

DURING FILLING OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR

ABOVE THE PRODUCT FLASH POINT.

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE
EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE.
ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY

...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

TREAT AS OIL SPILL

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE
IDENTIFICATION NUMBER IS: D002=CORROSIVE (PH)

...DOT HAZARD/UN#/ER GUIDE# IS: COMBUSTIBLE LIQUID NA1993/#27

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO
CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE), DELAYED(CHRONIC) AND FIRE

...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS

NFPA/HMIS : HEALTH - 3 ; FIRE - 2 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

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(CONTINUED)

SECTION IX - SPECIAL PROTECTION INFORMATION PAGE : 05

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EYE PROTECTION
CHEMICAL GOGGLES IF METHOD OF USE PRESENTS
THE LIKELIHOOD OF EYE CONTACT.

OTHER PROTECTION
N/A

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE
120 F. <--MAX 32 F. <--MIN INDOOR HEATED REFRIGERATED OUTDOOR

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
AVOID BREATHING VAPORS. STORE IN A COOL DRY
PLACE. VAPORS ARE HEAVIER THAN AIR AND WILL
COLLECT IN LOW AREAS. DO NOT ENTER THESE AREAS
WHERE VAPORS ARE SUSPECTED. DO NOT USE WITH
POWDERED ZINC OR ALUMINUM.

OTHER PRECAUTIONS
ALWAYS FOLLOW LABEL DIRECTIONS. KEEP OUT OF REACH
OF CHILDREN.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S. NUMBER	UPPER % LIMIT
1,1,1-TRICHLOROETHANE	71-55-6	100

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF
312 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF
1986 AND 40 CFR PART 372.

IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT
FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE
JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS
MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND
LABELED FOR MAINTAINING MOTOR VEHICLES.

SECTION XII - TRANSPORTATION • (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)
SHIPPING NAME

METAL GROOM

(CONTINUED)

SECTION XII - TRANSPORTATION • (FOR FUTURE USE)

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HAZARD CLASS	ID NUMBER	REPORT QTY
LABELS	LIMITED QTY	

UNIT CONTAINER

DOT SPS CONTAINER NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

1. THRESHOLD LIMIT VALUES AND BIOLOGICAL EXPOSURE INDICES, 1988-1989.
2. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 6TH EDITION.
N. IRVING SAX.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED
ACCURATE IN LIGHT OF CURRENT FORMULATION, HOWEVER, NO WARRANTY
IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA
OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

X-ERGON, A PARTSMaster CO., DIV OF NCH, ASSUMES NO RESPONSIBILITY
FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE
OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE
PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH
UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

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DATE OF ISSUE
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08/07/89

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS N/A	TRADE NAME & SYNONYMS METAL GROOM	
CHEMICAL FAMILY CHLORINATED SOLVENT	FORMULA X<- MIXTURE	
MANUFACTURERS NAME: X-ERCON, A PARTSMaster CO., DIV OF NCM		
ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE) BOX 152170 IRVING, TEXAS 75015		
PREPARED BY: KEVIN UHL/T.S. CHEMIST	PRODUCT CODE NUMBER 40305059	EMERGENCY TELEPHONE NUMBER 214-438-1381

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
1,1,1-TRICHLOROETHANE	IRRITANT	350PPM	1. 350PPM	1. 71-55-6
CARBON DIOXIDE	ASPHYXIAN	5000PPM	10,000PPM	124-38-9

SECTION IIA - NON-HAZARDOUS INGREDIENTS

NON-HAZARDOUS INGREDIENT NAMES AND CAS NUMBERS ARE PROTECTED UNDER NJ TRADE SECRET REGISTRY # 409363-5085P

METAL GROOM

SECTION III - PHYSICAL DATA

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BOILING PT. (FAHRENHEIT)	162	SPEC GRAVITY (H2O=1)	1.26
VAPOR PRESSURE (MM HG)	100	COLOR	WATER WHITE
VAPOR DENSITY (AIR=1)	4.8	ODOR	CHLOR. HYDROCARBON
PH @ 100%	N/A	CLARITY	CLEAR
PERCENT VOLATILE BY VOLUME (%)	100	EVAPORATION RATE (BU AC = 1)	0.75
SOLUBILITY IN WATER	NEGLIGIBLE		
VISCOSITY	NON-VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED) NONE T.C.C.	FLAMMABLE LIMITS	LEL N/A	UEL N/A
EXTINGUISHING MEDIA "ALCOHOL" X<-FOAM X<-FOAM	DRY X<-CD2	WATER X<-CHEMICAL	X<-SPRAY X<-OTHER
SPECIAL FIRE FIGHTING PROCEDURES WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR.			

UNUSUAL FIRE & EXPLOSION HAZARDS
SPRAY CANS WITH WATER TO PREVENT RUPTURE.
CAN FORM PHOSGENE UNDER CERTAIN CONDITIONS OF HEAT.

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
3<-HEALTH 0<-FLAMMABILITY 0<-REACTIVITY<-SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE :
350PPM 1.

EFFECTS OF OVEREXPOSURE
OVEREXPOSURE CAN CAUSE DIZZINESS, DRUNKENNESS AND DROWSINESS.

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METAL GROOM

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SECTION V - HEALTH HAZARD DATA

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UNCONSCIOUSNESS AND EVEN DEATH AT EXTREME DOSES. ABSORPTION THROUGH SKIN IS NOT A SIGNIFICANT ROUTE OF EXPOSURE - MILDLY IRRITATING ON CONTACT. INGESTION IS AN UNLIKELY ROUTE OF EXPOSURE BECAUSE THE PRODUCT IS AN AEROSOL. INGESTION OF SMALL QUANTITIES IS NOT LIKELY TO BE TOXIC. OVEREXPOSURE TO EYES CAN CAUSE MILD IRRITATION, BUT NO CORNEAL INJURY LIKELY.

- CHRONIC - (LONG TERM EXPOSURE)
INHALATION IS THE MAJOR ROUTE OF EXPOSURE - LOW SYSTEMIC TOXICITY. ACUTE EXPOSURES IN THE 1000 PPM RANGE CAUSE NARCOSIS. PROLONGED OR REPEATED SKIN CONTACT CAN CAUSE DERMATITIS THROUGH DEFATTING OF SKIN. IN EYES, OVEREXPOSURE MAY CAUSE CONJUNCTIVITIS.

PRIMARY ROUTE OF ENTRY: X-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION:
REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, ADMINISTER RESPIRATION OR OXYGEN IF AVAILABLE.

EYE CONTACT:
FLUSH WITH WATER HOLDING EYELIDS APART FOR 15 MINUTES. SEE A PHYSICIAN IF IRRITATION PERSISTS.

SKIN CONTACT:
REMOVE CONTAMINATED CLOTHING AND FLUSH EXPOSED AREAS WITH WATER FOR 5 TO 15 MINUTES.

INGESTION:
DO NOT INDUCE VOMITING. CALL PHYSICIAN AND OBTAIN MEDICAL ATTENTION.

NOTES TO PHYSICIAN:
BECAUSE RAPID ABSORPTION MAY OCCUR THROUGH LUNGS, THE DECISION OF WHETHER TO INDUCE VOMITING OR NOT SHOULD BE MADE BY A PHYSICIAN. IF LAVAGE IS PERFORMED, SUGGEST ENDOTRACHEAL AND/OR ESOPHAGEAL CONTROL. DANGER MUST BE WEIGHED AGAINST TOXICITY. NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE. TREATMENT BASED ON JUDGMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	<--YES	NTP	<--YES	OSHA	<--YES	ACGIH	<--YES	OTHER	<--YES
X<--NO		X<--NO		X<--NO		X<--NO		X<--NO	

1,1,1 TRICHLOROETHANE
ORL-RAT LD50: 10,000 MG/KG 2.
SKN-RBT LD50: 15,000 MG/KG 2.
EYE-MAN: 450 PPM/8H 2.
ORL-HMN TDLO: 570 MG/KG 2.

METAL GROOM

SECTION VII - REACTIVITY DATA

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STABILITY	X<--STABLE	<--UNSTABLE	CONDITIONS TO AVOID
			AVOID OPEN FLAMES OR OTHER HIGH TEMPERATURE SOURCES WHICH INDUCE THERMAL DECOMPOSITION.

INCOMPATIBILITY (MATERIALS TO AVOID)
WATER - LONG TERM CONTACT CAN PRODUCE CORROSIVE ACID. AVOID CONTACT WITH ALUMINUM AND ITS ALLOYS.

HAZARDOUS DECOMPOSITION PRODUCTS
HAZARDOUS DECOMPOSITION PRODUCTS: HYDROGEN CHLORIDE AND VERY SMALL AMOUNTS OF PHOSGENE AND CHLORINE.

HAZARDOUS	WILL NOT OCCUR	MAY OCCUR	CONDITIONS TO AVOID
X<--OCCUR			

POLYMERIZATION: N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
MOP UP, WIPE UP, OR SOAK UP IMMEDIATELY. PLACE CONTAMINATED MATERIALS INTO CONTAINER FOR PROPER STORAGE.

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL POLLUTION REGULATIONS. EMPTY CANS CAN BE WRAPPED IN NEWSPAPER AND DISPOSED OF IN TRASH.

NEUTRALIZING AGENT

N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
GENERAL EXHAUST IS USUALLY ADEQUATE.

RESPIRATORY PROTECTION
APPROVED ORGANIC VAPOR-TYPE RESPIRATOR REQUIRED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. FOR EMERGENCIES, A POSITIVE-PRESSURE BREATHING APPARATUS OR A FULL-FACE RESPIRATOR WITH AN APPROVED ORGANIC VAPOR CANISTER IS RECOMMENDED.

PROTECTIVE GLOVES
PVA GLOVES IF REPEATED OR PROLONGED SKIN CONTACT IS ANTICIPATED.

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