

**MATERIAL SAFETY DATA SHEET**

**PRODUCT NAME:** MIL-PRF-85285D TY.I,C.H #11136  
**PRODUCT CODE:** 100R80

**HMIS CODES:** H F R P  
3 3 0 G

=====**SECTION I - MANUFACTURER IDENTIFICATION**=====

**MANUFACTURER'S NAME:** MACH-DYNAMICS  
3870 La Sierra Ave., Suite 212, Riverside, CA 92505  
**ADDRESS:** Phone (909) 515-3748 Fax (775) 599-4585  
**EMERGENCY PHONE:** CHEMTRC 800-424-9300 **INFORMATION PHONE:** (909) 515-3748  
**DATE REVISED :** 06-31-99 **NAME OF PREPARER :** Mark Gingerella  
**REASON REVISED :** PROP 65 STATEMENT

=====**SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION**=====

| HAZARDOUS COMPONENTS | CAS NUMBER | OCCUPATIONAL EXPOSURE LIMITS |            |       | VAPOR PRESSURE<br>mm Hg @ TEMP | WEIGHT<br>PERCENT |
|----------------------|------------|------------------------------|------------|-------|--------------------------------|-------------------|
|                      |            | OSHA PEL                     | ACGIH TLV  | OTHER |                                |                   |
| *N/BUTYL ACETATE     | 123-86-4   | 150 PPM                      | 200 PPM    |       | 8.0 68F                        | 5                 |
| ACETONE              | 67-64-1    | 1000 PPM                     |            |       | 11.6 68F                       | 5                 |
| *ETHYL ACETATE (99%) | 141-78-6   | 400 PPM AC                   | GIH (1976) |       | 76.0 68F                       | 6                 |

\* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.  
"WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

=====**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**=====

**BOILING RANGE:** 131 to 244 Deg F **SPECIFIC GRAVITY (H2O=1):** 1.0  
**VAPOR DENSITY:** HEAVIER THAN AIR **EVAPORATION RATE:** SLOWER THAN ETHER  
**MATERIAL V.O.C.:** 3.16 LB/GL ( 379 G/L)  
**SOLUBILITY IN WATER:** ESSENTIALLY NIL.  
**APPEARANCE AND ODOR:** VISCOUS LIQUID WITH STRONG SOLVENT ODOR.

=====**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**=====

**FLASH POINT:** -4 Deg F **METHOD USED:** TCC  
**FLAMMABLE LIMITS IN AIR BY VOLUME-** LOWER: 1.7% UPPER: 12.8%

**EXTINGUISHING MEDIA:** FOAM, CO2, DRY CHEMICAL, WATER FOG

**SPECIAL FIREFIGHTING PROCEDURES**

USE AIR SUPPLIED EQUIPMENT FOR ENCLOSED AREAS.  
COOL EXPOSED CONTAINERS WITH WATER.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

HEAT/FIRE CONDITIONS: VAPORS FORM FLAMMABLE/EXPLOSIVE MIXTURES IN AIR. VAPORS HEAVY, MAY TRAVEL TO IGNITION SOURCE.  
OPEN/CLOSED CONTAINERS MAY CONTAIN FLAMMABLE/EXPLOSIVE VAPORS. UNDER FIRE CONDITIONS, MAY EMIT IRRITANT/TOXIC GAS AND/OR FUMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT(FIRE).

## ===== SECTION V - REACTIVITY DATA =====

**STABILITY: STABLE****CONDITIONS TO AVOID**

FLAMES, SPARKS, SMOKING AND HEAT.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

CARBON MONOXIDE AND CARBON DIOXIDE.

**HAZARDOUS POLYMERIZATION: WILL NOT OCCUR**

## ===== SECTION VI - HEALTH HAZARD DATA =====

**INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

PROLONGED AND/OR REPEATED EXPOSURE TO HIGH CONCENTRATIONS OF AIRBORNE PARTICLES MAY LEAD TO LUNG CHANGES.  
INHALATION OF HIGH CONCENTRATIONS MAY ALSO CAUSE NAUSEA, VOMITING, COUGH, PULMONARY IRRITATION AND HEADACHE.

**SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

EYE: DIRECT CONTACT AND/OR CONTACT WITH VAPORS MAY CAUSE IRRITATION.  
SKIN: PROLONGED AND/OR REPEATED CONTACT MAY CAUSE IRRITATION AND/OR DERMITITIS. MAY BE ABSORBED THROUGH THE SKIN.

**SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

CONTACT MAY CAUSE IRRITATION AND/OR DERMITITIS.  
MAY BE ABSORBED THROUGH THE SKIN LEADING TO SYSTEMIC EFFECTS.

**INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

ASPIRATION OF THIS PRODUCT INTO THE LUNGS MAY CAUSE PNEUMONITIS, PULMONARY EDEMA AND HEMORRAGE.  
INGESTION MAY CAUSE GASTROINTESTINAL DISTURBANCES.

**HEALTH HAZARDS (ACUTE AND CHRONIC)**

DIRECT CONTACT TO EYES MAY CAUSE IRRITATION. PROLONGED AND/OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION.  
INHALATION OF HIGH CONCENTRATIONS OF VAPORS MAY LEAD TO LUNG CHANGES, NAUSEA, VOMITING, COUGH, PULMONARY IRRITATION, AND CENTRAL NERVOUS SYSTEM DEPRESSION. INGESTION MAY CAUSE GASTROINTESTINAL DISTURBANCES.  
ASPIRATION OF THIS PRODUCT INTO THE LUNGS MAY CAUSE PNEUMONITIS, PULMONARY EDEMA AND HEMORRAGE.

**CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? YES****MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

INDIVIDUALS WITH PRE-EXISTING DISEASES IN OR HISTORY OF AILMENTS INVOLVING SKIN, CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEY.

**EMERGENCY AND FIRST AID PROCEDURES**

EYE CONTACT: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES. SEEK MEDICAL AID.  
SKIN: WASH THOROUGHLY WITH SOAP AND WATER. SEEK MEDICAL AID IF IRRITATION PERSISTS. INGESTION: IMMEDIATELY SEEK MEDICAL AID. DO NOT INDUCE VOMITING. GIVE 1 GLASS OF MILK OR 1-2 OUNCES OF ACTIVATED CHARCOAL IN WATER TO VICTIM.  
DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

## ===== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE =====

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

STOP LEAK IF NO RISK INVOLVED. REMOVE ALL SOURCES OF IGNITION. STAY UPWIND. ABSORB WITH INERT MATERIAL.  
FLUSH AREA WITH WATER. VENTILATE AREA FOR ATLEAST 24 HOURS OR UNTIL AREA HAS BEEN DECLARED SAFE.

**WASTE DISPOSAL METHOD**

USE INERT ABSORBENT MATERIALS ON SPILLS.

DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

KEEP CONTAINERS CLOSED AND UPRIGHT TO PREVENT LEAKAGE.

AVOID FLAMES, WELDING, OPEN LIGHTS, ETC.

AVOID BREATHING OF VAPOR AND SPRAY MIST

AVOID SKIN AND EYE CONTACT.

**OTHER PRECAUTIONS**

MAINTAIN GOOD PERSONAL HYGIENE.

DO NOT USE IN CONFINED AREAS, TANK OR PIT, WITHOUT ADEQUATE VENTILATION.

## ===== SECTION VIII - CONTROL MEASURES =====

**RESPIRATORY PROTECTION**

IF VENTILATION DOES NOT MAINTAIN INHALATION EXPOSURES BELOW TLV(PEL), USE MSHA/NIOSH APPROVED UNITS.  
USE UNITS PER CURRENT 29 CFR 1910.134 AND FOLLOW MANUFACTURERS' INSTRUCTIONS AND WARNINGS.  
IF WITHIN OSHA PROTECTION FACTOR, AIR PURIFYING OV/FILTER UNITS OK FOR USE.

**VENTILATION**

LOCAL AND MECHANICAL EXHAUST.

**PROTECTIVE GLOVES**

RUBBER GLOVES.

**EYE PROTECTION**

SAFETY GLASSES WITH SIDE SHIELDS OR GOGGLES.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**

EYE BATH AND SAFETY SHOWER.

**WORK/HYGIENIC PRACTICES**

MAINTAIN GOOD PERSONAL HYGIENE. DO NOT USE IN CONFINED AREAS WITHOUT ADEQUATE VENTILATION.

## ===== SECTION IX - DISCLAIMER =====

**DISCLAIMER**

AS THE CONDITIONS OR METHODS ARE BEYOND OUR CONTROL, WE DO NOT ASSUME ANY RESPONSIBILITY REGARDING USE OF PRODUCT.  
WE EXPRESSLY DISCLAIM ANY LIABILITY FOR ANY USE OF THE MATERIAL. INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE  
ALL STATEMENTS OR SUGGESTIONS ARE MADE WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED TO THE ACCURACY OF THE DOCUMENT.

**MATERIAL SAFETY DATA SHEET**

**PRODUCT NAME:** MIL-PRF-85285D TY.I CATALYST  
**PRODUCT CODE:** 100V46

**HMIS CODES:** H F R P  
3 3 0 G

=====**SECTION I - MANUFACTURER IDENTIFICATION**=====

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**EMERGENCY PHONE:** CHEMTRC 800-424-9300 **INFORMATION PHONE:** (909) 515-3748  
**DATE REVISED :** 01-01-99 **NAME OF PREPARER :** Mark Gingerella  
**REASON REVISED :** PROP 65 STATEMENT

=====**SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION**=====

| HAZARDOUS COMPONENTS                               | CAS NUMBER | OCCUPATIONAL EXPOSURE LIMITS |           |       | VAPOR PRESSURE<br>mm Hg @ TEMP | WEIGHT<br>PERCENT |
|--|------------|------------------------------|-----------|-------|--------------------------------|-------------------|
|  |            | OSHA PEL                     | ACGIH TLV | OTHER |                                |                   |
| *XYLENE  | 1330-20-7  | 100 PPM                      | 100 PPM   |       | 5.1 68F                        | 25                |
| 1,6-HEXAMETHYLENE DIISOCYANATE BASED POLYISOCYANTE | 822-06-0   | 50 PPM                       |           |       | 0.0 68F                        | 75                |

\* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.  
"WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM."

=====**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**=====

**BOILING POINT:** 280 Deg F **SPECIFIC GRAVITY (H2O=1):** 1.0  
**VAPOR DENSITY:** HEAVIER THAN AIR **EVAPORATION RATE:** SLOWER THAN ETHER  
**MATERIAL V.O.C.:** 2.15 LB/GL ( 258 G/L)  
**SOLUBILITY IN WATER:** ESSENTIALLY NIL.  
**APPEARANCE AND ODOR:** CLEAR, THIN LIQUID WITH STRONG SOLVENT ODOR.

=====**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**=====

**FLASH POINT:** 80 Deg F **METHOD USED:** TCC  
**FLAMMABLE LIMITS IN AIR BY VOLUME-** LOWER: 1.0% UPPER: N/A

**EXTINGUISHING MEDIA:** FOAM, CO2, DRY CHEMICAL, WATER FOG

**SPECIAL FIREFIGHTING PROCEDURES**

USE AIR SUPPLIED EQUIPMENT FOR ENCLOSED AREAS.  
COOL EXPOSED CONTAINERS WITH WATER.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

HEAT/FIRE CONDITIONS: VAPORS FORM FLAMMABLE/EXPLOSIVE MIXTURES IN AIR. VAPORS HEAVY, MAY TRAVEL TO IGNITION SOURCE.  
OPEN/CLOSED CONTAINERS MAY CONTAIN FLAMMABLE/EXPLOSIVE VAPORS.UNDER FIRE CONDITIONS,MAY EMIT IRRITANT/TOXIC GAS AND/OR FUMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT(FIRE).

## ===== SECTION V - REACTIVITY DATA =====

**STABILITY: STABLE****CONDITIONS TO AVOID**

FLAMES, SPARKS, SMOKING AND HEAT.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

HDI VAPORS AND OTHER IRRITATING, HIGHLY TOXIC GASES MAY BE GENERATED BY THERMALDECOMPOSITION OR COMBUSTION.

**HAZARDOUS POLYMERIZATION: WILL NOT OCCUR**

POLYMERIZATION MAY OCCUR IF IN CONTACT WITH MOISTURE OR OTHER MATERIALS WHICH REACT WITH ISOCYANATES.

## ===== SECTION VI - HEALTH HAZARD DATA =====

**INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**PROLONGED AND/OR REPEATED EXPOSURE TO HIGH CONCENTRATIONS OF AIRBORNE PARTICLES MAY LEAD TO LUNG CHANGES.  
INHALATION OF HIGH CONCENTRATIONS MAY ALSO CAUSE NAUSEA, VOMITING, COUGH, PULMONARY IRRITATION AND HEADACHE.**SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE**EYE: DIRECT CONTACT AND/OR CONTACT WITH VAPORS MAY CAUSE IRRITATION.  
SKIN: PROLONGED AND/OR REPEATED CONTACT MAY CAUSE IRRITATION AND/OR DERMITITIS. MAY BE ABSORBED THROUGH THE SKIN.**SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**CONTACT MAY CAUSE IRRITATION AND/OR DERMITITIS.  
MAY BE ABSORBED THROUGH THE SKIN LEADING TO SYSTEMIC EFFECTS.**INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**ASPIRATION OF THIS PRODUCT INTO THE LUNGS MAY CAUSE PNEUMONITIS, PULMONARY EDEMA AND HEMORRAGE.  
INGESTION MAY CAUSE GASTROINTESTINAL DISTURBANCES.**HEALTH HAZARDS (ACUTE AND CHRONIC)**DIRECT CONTACT TO EYES MAY CAUSE IRRITATION. PROLONGED AND/OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION.  
INHALATION OF HIGH CONCENTRATIONS OF VAPORS MAY LEAD TO LUNG CHANGES, NAUSEA, VOMITING, COUGH, PULMONARY IRRITATION, AND  
CENTRAL NERVOUS SYSTEM DEPRESSION. INGESTION MAY CAUSE GASTROINTESTINAL DISTURBANCES.  
ASPIRATION OF THIS PRODUCT INTO THE LUNGS MAY CAUSE PNEUMONITIS, PULMONARY EDEMA AND HEMORRAGE.**CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO**

NTP---NOT LISTED

IARC---NOT LISTED

OSHA---NOT REGULATED

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

ASTHMA AND ANY OTHER RESPIRATORY DISORDERS (BRONCHITIS, EMPHYSEMA, ETC.), SKIN ALLERGIES, ECZEMA.

**EMERGENCY AND FIRST AID PROCEDURES**EYE CONTACT: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF LUKE WARM WATER FOR 15 MINUTES. SEEK MEDICAL AID.  
SKIN: WASH THOROUGHLY WITH SOAP AND WATER. SEEK MEDICAL AID IF IRRITATION PERSISTS. INGESTION: IMMEDIATELY SEEK  
MEDICAL AID. DO NOT INDUCE VOMITING. GIVE 1 GLASS OF MILK OR 1-2 OUNCES OF ACTIVATED CHARCOAL IN WATER TO VICTIM.  
DO NOT ATTEMPT TO GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. INHALATION: MOVE TO AREA FREE FROM RISK OF  
FURTHER EXPOSURE. ADMINISTER ARTIFICIAL RESPIRATION OR OXYGEN AS NEEDED. OBTAIN MEDICAL ATTENTION.

=====**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE**=====

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

STOP LEAK IF NO RISK INVOLVED. REMOVE ALL SOURCES OF IGNITION. STAY UPWIND. ABSORB WITH INERT MATERIAL.  
FLUSH AREA WITH WATER. VENTILATE AREA FOR ATLEAST 24 HOURS OR UNTIL AREA HAS BEEN DECLARED SAFE.

**WASTE DISPOSAL METHOD**

USE INERT ABSORBENT MATERIALS ON SPILLS. DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.  
DECONTAMINATION SOLUTION: CONCENTRATED AMMONIA(3-8%), DETERGENT(2%), AND WATER(90-95%).DECONTAMINATE BEFORE DISPOSAL.  
RESPIRATORY PROTECTION IS RECOMMENDED DURING SPILL CLEAN UP. WASH DOWN SPILL AREA WITH DECONTAMINATION SOLUTION.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

KEEP CONTAINERS CLOSED AND UPRIGHT TO PREVENT LEAKAGE. AVOID FLAMES, WELDING, OPEN LIGHTS, ETC.  
AVOID BREATHING OF VAPOR AND SPRAY MIST  
AVOID SKIN AND EYE CONTACT.

**OTHER PRECAUTIONS**

MAINTAIN GOOD PERSONAL HYGIENE. DECONTAMINATION SOLUTION SHOULD BE USED IF SPILL OR CONTACT OCCURS.  
DO NOT USE IN CONFINED AREAS, TANK OR PIT WITHOUT ADEQUATE VENTILATION.  
PERSONS WITH ASTHMATIC TYPE CONDITIONS, RESPIRATORY DISEASES OR SKIN ECZEMA SHOULD BE EXCLUDED FROM ISOCYANATE CONTACT.

=====**SECTION VIII - CONTROL MEASURES**=====

**RESPIRATORY PROTECTION**

IF VENTILATION DOES NOT MAINTAIN INHALATION EXPOSURES BELOW TLV(PEL), USE MSHA/NIOSH APPROVED UNITS FOR ISOCYANATES.  
USE UNITS PER CURRENT 29 CFR 1910.134 AND FOLLOW MANUFACTURERS' INSTRUCTIONS AND WARNINGS.  
IF WITHIN OSHA PROTECTION FACTOR, AIR PURIFYING OV/FILTER UNITS OK FOR USE.

**VENTILATION**

LOCAL AND MECHANICAL EXHAUST.

**PROTECTIVE GLOVES**

CHEMICAL RESISTANT GLOVES. COVER AS MUCH OF THE EXPOSED SKIN AREA AS POSSIBLE WITH APPROPRIATE CLOTHING.

**EYE PROTECTION**

SAFETY GLASSES WITH SIDE SHIELDS OR GOGGLES. CONTACT LENSES SHOULD NOT BE WORN.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**

EYE BATH AND SAFETY SHOWER.

**WORK/HYGIENIC PRACTICES**

MAINTAIN GOOD PERSONAL HYGIENE. DO NOT USE IN CONFINED AREAS WITHOUT ADEQUATE VENTILATION.

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