

Appendix A
Material Safety Data Sheets for High VOC and Low-VOC Cleaners

High VOC Cleaner Used at DRS Sensors & Targeting Systems

VAN WATER & ROGER -- ISOPROPYL ALCOHOL -- 6505-00-261-7256

===== Product Identification =====

Product ID:ISOPROPYL ALCOHOL
 MSDS Date:05/01/1993
 FSC:6505
 NIIN:00-261-7256
 MSDS Number: BVGJL
 === Responsible Party ===
 Company Name:VAN WATER & ROGER
 Address:2600 CAMPUS DR
 Box:5932
 City:SAN MATEO
 State:CA
 ZIP:94403-2522
 Country:US
 Info Phone Num:714-864-2310
 Emergency Phone Num:800-424-9300
 Preparer's Name:C.A.EISENHARD
 CAGE:09N91
 === Contractor Identification ===
 Company Name:CHEMICAL COMMODITIES AGENCY, INC.
 Address:27447 PACIFIC STREET
 Box:City:HIGHLAND
 State:CA
 ZIP:92346-2640
 Country:US
 Phone:909-864-2310
 CAGE:60777
 Company Name:VAN WATER & ROGERS INC.,SUB OF UNIVAR
 Address:6100 CARILLON POINT
 Box:5932
 City:KIRKLAND
 State:WA
 ZIP:98033
 Country:US
 Phone:206-889-3400
 CAGE:09N91
 Company Name:VAN WATERS AND ROGERS
 Address:2256 JUNCTION AVE
 City:SAN JOSE
 State:CA
 ZIP:95131
 Country:US
 Phone:408-435-8700/800-424-9300 (CHEMTREC)
 CAGE:0AN91

===== Composition/Information on Ingredients =====

Ingrid Name:ISOPROPYL ALCOHOL (SARA III) (PER SPEC, MATERIAL IS
 "ISOPROPYL ALCOHOL, N.F." FORMULATION COULD NOT BE FOUND."
 CAS:67-63-0
 RTECS #:NT8050000
 Fraction by Wt: PER N F
 Other REC Limits:NONE DETERMINED
 OSHA PEL:400 PPM/500 STEL
 ACGIH TLV:400 PPM/500STEL;9192

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 ===== Hazards Identification =====
 =====

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
 Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
 Health Hazards Acute and Chronic:INHALATION-IRRITATION OF NOSE &
 THROAT. EYES-IRRITATION, CORNEAL BURNS. PROLONGED EXPOSURE TO HIGH
 CONCENTRATIONS MAY CAUSE SEVERE OR FATAL CNS DEPRESSION.
 Explanation of Carcinogenicity:NOT CARCINOGENIC.
 Effects of Overexposure:INHALATION-HIGHER CONCENTRATIONS MAY CAUSE
 HEADACHE, VOMITING, COMA. EVEN HIGHER CONCENTRATIONS MAY CAUSE COMA
 OR DEATH. SKIN-DRYNESS, POSSIBLE DERMATITIS. INGESTION-LARGE
 AMOUNTS CAUSES HEADACHE, NAU SEA, VOMITING, STOMACH CRAMPS,
 UNCONSCIOUSNESS OR DEATH.
 Medical Cond Aggravated by Exposure:PRE-EXISTING SKIN DISORDERS, EYE
 PROBLEMS, OR IMPAIRED RESPIRATORY FUNCTION MAY BE SUSCEPTIBLE.

=====
 ===== First Aid Measures =====
 =====

First Aid:INHALATION: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION
 IF NEEDED, SEEK MEDICAL ATTENTION. EYES: FLUSH WITH WATER FOR 15
 MINUTES, GET MEDICAL ATTENTION. SKIN: WASH AREA WITH SOAP & WATER.
 IF IRRI TATION PERSISTS, SEEK MEDICAL ATTENTION.INGESTION: INDUCE
 VOMITING BY GIVING WATER, PREVENT ASPIRATION, GET IMMEDIATE MEDICAL
 ATTENTION.

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 ===== Fire Fighting Measures =====
 =====

Flash Point Method:TCC
 Flash Point:53.0F,11.7C
 Lower Limits:2.0
 Upper Limits:12.7
 Extinguishing Media:WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE, ALCOHOL
 FOAM; DO NOT USE DIRECT WATER SPRAY.
 Fire Fighting Procedures:FIREFIGHTERS SHOULD WEAR SELF-CONTAINED
 BREATHING APPARATUS & FULL PROTECTIVE CLOTHING. USE WATER SPRAY TO
 COOL NEARBY CONTAINERS & STRUCTURES THAT ARE EXPOSED.
 Unusual Fire/Explosion Hazard:EXTINGUISH ALL NEARBY SOURCES OF IGNITION
 BECAUSE VAPORS MAY BE MOVED BY AIR CURRENTS TO IGNITION SOURCES
 DISTANT FROM THE HANDLING POINT.

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 ===== Accidental Release Measures =====
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Spill Release Procedures:EXTINGUISH ALL IGNITION SOURCES. MAKE SURE ALL
 HANDLING EQUIPMENT IS ELECTRICALLY GROUNDED. FOR SMALL SPILLS MOP
 UP & PLACE IN D.O.T. APPROVED CONTAINERS.

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 ===== Handling and Storage =====
 =====

Handling and Storage Precautions:KEEP AWAY FROM HEAT, SPARKS & OPEN
 FLAMES. STORE IN COOL, DRY, WELL-VENTILATED PLACE AWAY FROM
 INCOMPATIBLE MATERAILS. VENT CONTAINERS FREQUENTLY.
 Other Precautions:MORE OFTEN IN WARM WEATHER, USE ONLY ON NON-SPARKING
 TOOLS AND ELECTRICALLY GROUND ALL EQUIPMENT WHEN HANDLING THIS
 PRODUCT. DO NOT USE PRESSURE TO EMPTY CONTAINERS. EMPTY CONTAINERS
 CAN HAVE RESIDUES , GASES & MISTS.

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 ===== Exposure Controls/Personal Protection =====
 =====

Respiratory Protection:BASED UPON CONTAMINATION LEVELS IN THE WORK
 PLACE. FOR EXAMPLE: HALF MASK AIR-PURIFYING CARTRIDGE RESPIRATORS

OR SUPPLIED AIR RESPIRATORS.
Ventilation:LOCAL-MECHNAICAL EXHAUST.
Protective Gloves:RUBBER GLOVES.
Eye Protection:SAFETY GOGGLES.
Other Protective Equipment:RUBBER APRON, RUBBER BOOTS, IMPERVIOUS CLOTHING.
Work Hygienic Practices:EYE WASH FOUNTAIN, QUICK DRENCH SHOWER.
Supplemental Safety and Health
AN MSDS WAS REQUESTED. CHEM COMMODITIES INFORMED US 12OCT94 THAT THEY HAD SUPPLIED VAN WATERS & ROGERS MATERIAL TO DPSC. MSDS COPIED FOR ANOTHER VWR WHICH HAD BEEN SUPPLIED BY CHEM COMMODITIES. -- MATERIAL PER SPEC IS "ISOPROPYL ALCOHOL, N.F.". FORMULATION COULD NOT BE FOUND. FORMULA IS THOUGHT TO BE 70%/30% WATER.

===== Physical/Chemical Properties =====

HCC:F2
NRC/State Lic Num:NONE
Boiling Pt:B.P. Text:181F,83C
Melt/Freeze Pt:M.P/F.P Text:-127F,-88C
Vapor Pres:33
Vapor Density:2.07
Spec Gravity:0.79
Evaporation Rate & Reference:3.0 (BUTYL ACETATE=1)
Solubility in Water:100%
Appearance and Odor:MEDICINAL ALCOHOLIC ODOR.

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES
STRONG OXIDIZERS, ALUMINUM, ACETALDEHYDE, CHLORINE, ETHYLENE OXIDE, HYPOCHLOROUS ACID, ALDEHYDES.
Stability Condition to Avoid:HEAT, SPARKS AND OPEN FLAMES.
Hazardous Decomposition Products:MAY LIBERATE CARBON MONOXIDE AND CARBON DIOXIDE.

===== Disposal Considerations =====

Waste Disposal Methods:CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL REGULATORY AGENCIES TO ASCERTAIN PROPER DISPOSAL PROCEDURES.

Disclaimer (provided with this information by the compiling agencies):
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High VOC Cleaner Used at Huhtamaki

MATERIAL SAFETY DATA SHEET

WASH EB

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PRODUCT NAME: WASH EB
 PRODUCT CODE: B111
 CHEMICAL NAME: BLANKET AND ROLLER WASH

HMS CODES: H P R P
 2 2 0 B

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

MANUFACTURER'S NAME: PRINTERS' SERVICE
 ADDRESS : 26 Blanchard Street
 Newark, New Jersey 07105

EMERGENCY PHONE : 1-800-424-9300 LAST REVISION : 06/25/97
 INFORMATION PHONE : 1-973-589-7800 DATE REVISED : 03/17/99
 PREPARER : ENVIRONMENTAL DEPT.

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

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE mm Hg @ TEMP	WEIGHT PERCENT
* 2-BUTOXYETHANOL PEL 25ppm: TLV 25ppm // LD50 1.746g/kg; LC50 800ppm/8hr // HAP reportable	111-76-2	0.6 mmHg 20 C	80 - 90%
n-PROPYL ALCOHOL PEL 200PPM: TLV 200PPM // LD50 1.87g/kg; LC50> 20000ppm/hr	71-23-8	15mmHg 20 C	10 - 20%

* Indicates chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

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

BOILING POINT : 204 F SPECIFIC GRAVITY (H2O=1): 0.88
 VAPOR DENSITY : 3.7 (air = 1) VAPOR PRESSURE : 4.1 mmHg at 20 C
 DRYING RATE : 0.3(nButyl Acet.-1) VOC : 7.36 lb/gal METHOD: EPA #24
 PHOTOREACTIVE : NO H2O SOLUBILITY : 100% 1 lb/gal = 120 gm/l
 VOLATILES : 100% APPEARANCE : CLEAR
 PHYSICAL STATE : LIQUID ODOR : ALCOHOL ODOR

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

FLASH POINT : 105 F METHOD USED: TCC
 FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 1.1 UPPER: 13.6
 EXTINGUISHING MEDIA: CARBON DIOXIDE, FOAM, OR DRY POWDER (WATER MAY BE INEFFECTIVE)
 SPECIAL FIREFIGHTING PROCEDURES : KEEP CONTAINER COOL. CONTROL COOLING WATER SINCE IT MAY TEND TO SPREAD BURNING MATERIAL.
 UNUSUAL FIRE AND EXPLOSION HAZARDS : IF BOILING POINT OF SOLVENT IS REACHED, THE CONTAINER MAY RUPTURE EXPLOSIVELY AND IF IGNITED, GENERATE A FIREBALL.

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

STABILITY: YES IF NO CONDITIONS:
 INCOMPATIBILITY (MATERIALS TO AVOID): YES
 IF YES WHICH ONES: STRONG OXIDIZER
 HAZARDOUS DECOMPOSITION OR BYPRODUCTS: CARBON DIOXIDE, CARBON MONOXIDE ON IGNITION
 HAZARDOUS POLYMERIZATION: NONE

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

INDICATIONS OF EXPOSURE:
 INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: HEADACHE, DIZZINESS, NAUSEA, VERY HIGH LEVELS OF VAPORS COULD CAUSE UNCONCIOUSNESS, SLIGHT IRRITATION OF THE MUCOUS MEMBRANE
 EYE CONTACT AND SYMPTOMS OF EXPOSURE: REDNESS OR BURNING SENSATION.
 SKIN HEALTH RISKS AND SYMPTOMS OF EXPOSURE: REDNESS, ITCHING, IRRITATION ON OVEREXPOSURE.
 INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SEVERE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA.
 EMERGENCY AND FIRST AID PROCEDURES
 IF IN EYES: FLUSH WITH WATER FOR 15 MIN. LIFT UPPER AND LOWER EYE LIDS. SEE A DOCTOR.
 IF ON SKIN: WASH WITH SOAP AND WATER.
 IF INHALED: REMOVE TO FRESH AIR. IF UNCONSCIOUS, USE ARTIFICIAL RESPIRATION.
 IF INGESTED: DO NOT INDUCE VOMITING. SEE DOCTOR IMMEDIATELY TO PUMP STOMACH.
 HEALTH HAZARDS (ACUTE AND CHRONIC):

MATERIAL SAFETY DATA SHEET

WASH EB

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EFFECT OF CHRONIC EXPOSURE: NONE

EFFECT OF ACUTE EXPOSURE: NONE

IN ALL CASES OF EMERGENCY AND FIRST AID, WE STRONGLY RECOMMEND A DOCTOR BE SEEN

CARCINOGENICITY: NTP CARCINOGEN: No IARC MONOGRAPHS: No OSHA REGULATED: No
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: DERMATITIS. MAY AGGRAVATE EXISTING LIVER AND KIDNEY AILMENTS.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: VENTILATE AREA. KEEP AWAY FROM STRONG OXIDIZERS, HEAT, SPARKS OR OPEN FLAMES. PREVENT SPILL FROM SPREADING BY USING AN INERT MATERIAL, SUCH AS SAND, AS A DAM. KEEP OUT OF ALL WATERWAYS OR WATER DRAINS. DO NOT FLUSH AREA WITH WATER. FOR SMALL SPILLS USE ABSORBENT PADS. FOR LARGE SPILLS, CALL A SPILL RESPONSE TEAM. IF REQUIRED, CONTACT STATE/LOCAL AGENCIES.

WASTE DISPOSAL METHOD: PRODUCT SOAKED ABSORBENT SHOULD BE PLACED IN SEALED METAL DRUMS FOR DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: KEEP AWAY FROM STRONG OXIDIZERS, HEAT, SPARKS AND OPEN FLAMES. DO NOT CUT OR DRILL INTO AN EMPTY CONTAINER IN ANY WAY THAT MIGHT GENERATE A SPARK. SOLVENT RESIDUE IN THE CONTAINER COULD IGNITE AND CAUSE AN EXPLOSION. KEEP CONTAINER TIGHTLY CLOSED AND OUT OF THE WEATHER.

OTHER PRECAUTIONS: WE RECOMMEND THAT CONTAINERS BE EITHER PROFESSIONALLY RECONDITIONED FOR REUSE OR PROPERLY DISPOSED OF BY CERTIFIED FIRMS TO HELP REDUCE THE POSSIBILITY OF AN ACCIDENT. DISPOSAL OF CONTAINERS SHOULD BE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS. "EMPTY" DRUMS SHOULD NOT BE GIVEN TO INDIVIDUALS.

SECTION VIII - CONTROL MEASURES
EXPOSURE CONTROL AND PERSONAL PROTECTION:

RESPIRATORY PROTECTION: IF TLV IS EXCEEDED USE A GAS MASK WITH APPROPRIATE CARTRIDGES, CANNISTER OR SUPPLIED AIR EQUIPMENT.
VENTILATION: IF NORMAL VENTILATION IS INADEQUATE USE ADDITIONAL SYSTEMS, ESPECIALLY LOCAL VENTILATION. IF THE VAPOR LEVEL CAN APPROACH THE LEL - LOWER EXPLOSION LIMIT, USE EXPLOSION PROOF SYSTEMS.

PROTECTIVE GLOVES: USE SOLVENT RESISTANT GLOVES.

EYE PROTECTION: USE SAFETY GLASSES OR GOGGLES.

OTHER PROTECTIVE EQUIPMENT OR CLOTHING: NONE.

WORK/HYGIENIC PRACTICES: WASH SKIN/CLOTHES IF THEY COME IN CONTACT WITH THE PRODUCT. DO NOT WEAR CLOTHING WET WITH THE PRODUCT.

SECTION IX - SHIPPING INFORMATION
GROUND SHIPMENT. UN No : NA 1993

D. O. T HAZARD CLASSIFICATION: COMBUSTIBLE LIQUID- N.O.S.

SECTION X - DISCLAIMER

THE INFORMATION AND RECOMMENDATIONS HEREIN HAVE BEEN COMPILED FROM OUR RECORDS AND OTHER SOURCES BELIEVED TO BE RELIABLE. NO WARRANTY, GUARANTY OR REPRESENTATION IS MADE BY PRINTERS' SERVICE AS TO THE SUFFICIENCY OF ANY REPRESENTATION. THE ABSENCE OF DATA INDICATES ONLY THAT THE DATA IS NOT READILY AVAILABLE TO US. ADDITIONAL SAFETY MEASURES MAY BE REQUIRED UNDER PARTICULAR OR EXCEPTIONAL CONDITIONS OF USE. WITH REGARD TO THE MATERIALS THEMSELVES, PRINTERS' SERVICE MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

MATERIAL SAFETY DATA SHEET
E-CURE CLASSIC CA

PRODUCT NAME: E-CURE CLASSIC CA
PRODUCT CODE: R149
CHEMICAL NAME: BLANKET AND ROLLER WASH

Page: 1

EMTS CODES: H F R P
2 2 0 5

SECTION I - MANUFACTURER IDENTIFICATION
MANUFACTURER'S NAME: PRINTERS' SERVICE
ADDRESS: 26 Blanchard Street
Newark, New Jersey 07102

EMERGENCY PHONE: 1 800 424 9300
INFORMATION PHONE: 1 973 589-7800

LAST REVISION: 04/10/02
DATE REVISED: ENVIRONMENTAL DEPT.
PREPARER:

SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE mm Hg @ 20 C	WEIGHT PERCENT
2-BUTOXYETHANOL PEL: 25ppm; TLV: 25ppm // LC50: 800ppm/8hr; 1050 1.76g/kg // IAP reportable	111-76-2	0.6 mmHg	70 - 80%
DIACETONE ALCOHOL PEL: 50ppm; TLV: 50ppm // LD50: 0.5 g/kg	173-42-2	1 mmHg	10 - 20%

* Indicates chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS
BOILING POINT: 212 - 336 F
VAPOR DENSITY: 2.22 (air = 1)
DRYING RATE: 0.1 (unit) Acet. 13
PHOTOREACTIVE: No
VOLATILES: 100%
PHYSICAL STATE: Liquid
SPECIFIC GRAVITY (4/4): 0.93
VAPOR PRESSURE: 9.47 mmHg (0.66 inHg) at 20 C
VOC: 6.65 lb/gal
METH: EPA #24
WATER SOLUBILITY: Miscible
APPEARANCE: Clear
ODOR: Mild

SECTION IV - FIRE AND EXPLOSION HAZARD DATA
FLASH POINT: 126 F
METHOD USED: TCC
FLAMMABLE LIMITS IN AIR BY VOLUME - LOWER: 1.1 UPPER: 10.6

EXTINGUISHING MEDIA: CARBON DIOXIDE FOAM OR DRY POWDER (WATER MAY BE INEFFECTIVE)
SPECIAL FIREFIGHTING PROCEDURES: KEEP CONTAINER COOL. CONTROL COOLING WATER SINCE IT MAY TEND TO SPREAD BURNING MATERIAL.
UNUSUAL FIRE AND EXPLOSION HAZARDS: IF BOILING POINT OF SOLVENT IS REACHED, THE CONTAINER MAY RUPTURE EXPLOSIVELY AND IF IGNITED, GENERATE A FIREBALL.

SECTION V - REACTIVITY DATA

STABILITY: YES IF NO CONDITIONS:
INCOMPATIBILITY (MATERIALS TO AVOID): YES
IF YES WHICH ONES: STRONG OXIDIZER
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: CARBON DIOXIDE, CARBON MONOXIDE ON IGNITION
HAZARDOUS POLYMERIZATION: NONE

SECTION VI - HEALTH HAZARD DATA

INDICATIONS OF EXPOSURE:
INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: HEADACHE, DIZZINESS, NAUSEA. VERY HIGH LEVELS OF VAPORS COULD CAUSE UNCONSCIOUSNESS.
SLIGHT IRRITATION OF THE MUCOUS MEMBRANE
EYE CONTACT AND SYMPTOMS OF EXPOSURE: REDNESS OR BURNING SENSATION
SKIN HEALTH RISKS AND SYMPTOMS OF EXPOSURE: REDNESS, ITCHING, IRRITATION ON OVEREXPOSURE.
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IF ON SKIN: WASH WITH SOAP AND WATER.
IF INHALED: REMOVE TO FRESH AIR. IF UNCONSCIOUS, USE ARTIFICIAL RESPIRATION.
IF INGESTED: DO NOT INDUCE VOMITING. SEE DOCTOR IMMEDIATELY TO PUMP STOMACH.

MATERIAL SAFETY DATA SHEET
E-CURE CLASSIC CA

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HEALTH HAZARDS (ACUTE AND CHRONIC):

EFFECT OF CHRONIC EXPOSURE: PROLONGED HIGH VAPOR EXPOSURE MAY CAUSE LIVER AND KIDNEY PROBLEMS

EFFECT OF ACUTE EXPOSURE: NONE

IN ALL CASES OF EMERGENCY AND FIRST AID, WE STRONGLY RECOMMEND A DOCTOR BE SEEN

CARCINOGENICITY: NTP CARCINOGEN; No IARC MONOGRAPHS; No OSHA REGULATED; No
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: DERMATITIS, EXISTING LIVER AND KIDNEY
AILMENTS.

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

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: VENTILATE AREA. KEEP AWAY FROM
STRONG OXIDIZERS, HEAT, SPARKS OR OPEN FLAMES. PREVENT SPILL FROM SPREADING BY USING AN INERT MATERIAL, SUCH AS SAND, AS A DAM.
KEEP OUT OF ALL WATERWAYS OR WATER DRAINS. DO NOT FLUSH AREA WITH WATER. FOR SMALL SPILLS USE ABSORBENT PADS. FOR LARGE SPILLS
CALL A SPILL RESPONSE TEAM. IF REQUIRED, CONTACT STATE/LOCAL AGENCIES.

WASTE DISPOSAL METHOD: PRODUCT SOAKED ADSORBENT SHOULD BE PLACED IN SEALED METAL DRUMS FOR DISPOSAL IN ACCORDANCE
WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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BY CERTIFIED FIRMS TO HELP REDUCE THE POSSIBILITY OF AN ACCIDENT. DISPOSAL OF CONTAINERS SHOULD BE IN ACCORDANCE WITH APPLICABLE
LAWS AND REGULATIONS. "EMPTY" DRUMS SHOULD NOT BE GIVEN TO INDIVIDUALS.

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

EXPOSURE CONTROL AND PERSONAL PROTECTION:
RESPIRATORY PROTECTION: IF TLV IS EXCEEDED USE A GAS MASK WITH APPROPRIATE CARTRIDGES, CANNISTER OR SUPPLIED AIR EQUIPMENT.
VENTILATION: IF NORMAL VENTILATION IS INADEQUATE USE ADDITIONAL SYSTEMS ESPECIALLY LOCAL VENTILATION IF THE VAPOR LEVEL CAN APPROACH
THE LEL - LOWER EXPLOSION LIMIT. USE EXPLOSION PROOF SYSTEMS.

PROTECTIVE GLOVES: USE SOLVENT RESISTANT GLOVES.
EYE PROTECTION: USE SAFETY GLASSES OR GOGGLES.
OTHER PROTECTIVE EQUIPMENT OR CLOTHING: NONE.

WORK/HYGIENIC PRACTICES: WASH SKIN/CLOTHES IF THEY COME IN CONTACT WITH THE PRODUCT. DO NOT WEAR CLOTHING WITH
THE PRODUCT.

===== SECTION IX - SHIPPING INFORMATION =====

GROUND SHIPMENT.
D.O.T HAZARD CLASSIFICATION: COMBUSTIBLE LIQUID, N.O.S. UN No : NA 1993

===== SECTION X - DISCLAIMER =====

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WARRANTY, GUARANTY OR REPRESENTATION IS MADE BY PRINTERS' SERVICE AS TO THE SUFFICIENCY OF ANY REPRESENTATION. THE ABSENCE OF DATA
INDICATES ONLY THAT THE DATA IS NOT READILY AVAILABLE TO US. ADDITIONAL SAFETY MEASURES MAY BE REQUIRED UNDER PARTICULAR OR
EXCEPTIONAL CONDITIONS OF USE. WITH REGARD TO THE MATERIALS THEMSELVES, PRINTERS' SERVICE MAKES NO WARRANTY OF ANY KIND WHATSOEVER,
EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

Low-VOC Cleaner Used at Sandberg Furniture and Tested at DRS Sensors & Targeting Systems

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 1-800-851-8133
CHEMTREC: 1-800-424-9393

National Registration in Canada
© NFPA: 400-999-6000

Outside U.S. and Canada
Chemline: 780-827-3827

NOTE: CHEMTREC, CANUTEC and National
Response Center emergency numbers to be
used only in the event of chemical emergencies
involving a spill, leak, fire, exposure or accident
involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-882-3537) for assistance.

ACETONE

MSDS Number: A0446 — Effective Date: 04/10/01

1. Product Identification

Synonyms: Dimethylketone; 2-propanone; dimethylketal
CAS No.: 67-64-1
Molecular Weight: 58.08
Chemical Formula: (CH₃)₂CO
Product Codes:
J.T. Baker: 5356, 5580, 5805, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9013, 9036, 9125, 9254, 9271,
A134, V655
Mallinckrodt: 0018, 2432, 2435, 2437, 2438, 2440, 2443, 2445, 2850, H451, H580, H981

2. Composition/Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Acetone	67-64-1	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

**DANGER: EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY
TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.**

J.T. Baker SAF-T-DATA^(SM) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation of vapors irritates the respiratory tract. May cause coughing, dizziness, dullness, and headache. Higher concentrations can produce central nervous system depression, narcosis, and unconsciousness.

Ingestion:

Swallowing small amounts is not likely to produce harmful effects. Ingestion of larger amounts may produce abdominal pain, nausea and vomiting. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms are expected to parallel inhalation.

Skin Contact:

Irritating due to defatting action on skin. Causes redness, pain, drying and cracking of the skin.

Eye Contact:

Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure:

Prolonged or repeated skin contact may produce severe irritation or dermatitis.

Aggravation of Pre-existing Conditions:

Use of alcoholic beverages enhances toxic effects. Exposure may increase the toxic potential of chlorinated hydrocarbons, such as chloroform, trichloroethane.

4. First Aid Measures

Inhalation:

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

Ingestion:

Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:

Flash point: -20C (-4F) CC

Autoignition temperature: 465C (869F)

Flammable limits in air % by volume:

lcl: 2.5; ucl: 12.8

Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB(R) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Acetone:

-OSHA Permissible Exposure Limit (PEL):
1000 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):

500 ppm (TWA), 750 ppm (STEL) A4 - not classifiable as a human carcinogen

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin

contact.

Eye Protection:

(Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless, volatile liquid.

Odor:

Fragrant, mint-like

Solubility:

Miscible in all proportions in water.

Specific Gravity:

0.79 @ 20C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

56.5C (133F) @ 760 mm Hg

Melting Point:

-95C (-139F)

Vapor Density (Air=1):

2.0

Vapor Pressure (mm Hg):

400 @ 39.5C (104F)

Evaporation Rate (BuAc=1):

ca. 7.7

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Concentrated nitric and sulfuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, potassium t-butoxide.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5800 mg/kg; Inhalation rat LC50: 50,100mg/m3; Irritation eye rabbit, Standard Draize, 20 mg severe; investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Acetone (67-64-1)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is expected to readily biodegrade. When released to water, this material is expected to quickly evaporate. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

International (Water, I.M.O.)

Proper Shipping Name: ACETONE
 Hazard Class: 3
 UN/NA: UN1090
 Packing Group: II
 Information reported for product/size: 350LB

15. Regulatory Information

Ingredient	-----\Chemical Inventory Status - Part 1\-----			
	TSCA	EC	Japan	Australia

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	OSL	MSL	Phil.
Acetone (67-64-1)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	HQ	TPQ	List	Chemical Catg.
Acetone (67-64-1)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	261.33	-TSCA-
			B(d)
Acetone (67-64-1)	5000	0003	No

Chemical Weapons Convention: No FSCA 12(b): Yes CDTA: Yes
SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2(Y)E
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0
Label Hazard Warning:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Label First Aid:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but **DO NOT INDUCE**. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
No changes.
Disclaimer:
.....

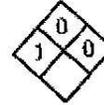
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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

Low-VOC Cleaner Tested at Medtronic Diabetes and DRS Sensors & Targeting Systems



A division of



Material Safety Data Sheet

MIRACHEM Pressroom Cleaner

(Formulation No. 2501)

Section I - General

Manufacturer Name:	The Mirachem Corporation P.O. Box 27808 Tempe, Arizona 85285-7808	Date Prepared:	7/3/96
		Revision Date:	
Emergency Phone:	1-(800) 847-3527		

Section II - Hazardous Ingredients/Identity Information

Hazardous Component (CAS #)	OSHA PEL	ACGIH TLV	Other Limits	% (Optional)
None				

N.E. = None Established

Section III - Physical/Chemical Characteristics

Boiling Point:	>210°F	Specific Gravity (H ₂ O = 1):	0.9957
Vapor Pressure (mm Hg.): @ 20°C	Composite 0.008	pH:	8.7-9.5
Vapor Density (AIR = 1):	> 1	Evaporation Rate (Butyl Acetate=1):	> 1
Solubility in Water:	Complete	Melting Point:	N/A
Appearance and Odor:	Clear liquid with a mild citrus odor		
N/A = Not Applicable	N.E. = Not Established		

Section IV - Fire and Explosion Hazard

Flash Point (Method Used):	>212°F (PMCC ASTM D93)	Explosive Limits:	N/A
Extinguishing Media:	N/A		
Special Fire Fighting Procedures:	N/A	Unusual Fire Fighting and Explosion Hazards:	N/A

Section V - Reactivity

Stability:	Unstable Stable	X	Incompatibility (Materials to Avoid):	Strong Acids and Alkalies. demulsify product.
Hazardous Decomposition or By-products:	Thermal decomposition may produce CO ₂			
Hazardous Polymerization:	May Occur		Will Not Occur X	

Section VI - Health Hazard Data

Eye Contact:	May cause mild temporary irritation.
Skin Contact:	Prolonged or repeated exposure may cause mild irritation.
Inhalation:	No adverse effects expected.
Ingestion:	No adverse health effects are anticipated to occur as a result of acute ingestion. Chronic effects are not known.
Carcinogenicity:	None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.
Signs/Symptoms of Overexposure:	Prolonged contact may cause mild irritation or dryness to sensitive skin.
Medical Conditions Generally Aggravated by Exposure:	None known.

Section VII - Emergency and First Aid Procedures

Eyes:	Immediately flush with clean water. Consult physician if necessary.
Skin:	Rinse with water.
Ingestion:	If swallowed, treat symptomatically and supportively. Do not induce vomiting. If victim conscious and alert, give two glasses of water or milk to drink. If vomiting occurs, keep head below hips to prevent aspiration. Contact Physician.
Inhalation:	No adverse effects anticipated.

Section VIII - Precautions for Safe Handling and Use

In Case of Spill:	Flush with water into containing area.
Waste Disposal:	Flush to sewer where applicable within Federal, State or Local disposal requirements.
Handling & Storage Precautions:	Wear protective goggles or face shield if splashing or spraying liquid. Protect from freezing.
Other Precautions:	Keep container tightly closed. Keep out of reach of children.

Section IX - Control Measures

Respiratory Protection:	No respiratory protection is necessary.
Ventilation:	Good general ventilation is sufficient.
Protective Clothing:	When prolonged skin contact is expected, wear protective gloves.
Eye Protection:	Wear safety glasses.
Work/Hygienic Practices:	Use good personal hygiene practices, wash hands before eating, drinking, smoking, or using toilet facilities.

Low-VOC Cleaners Tested at DRS Sensors & Targeting Systems

SOYGOLD[®] 2500 RINSEABLE SOLVENT

Material Safety Data Sheet

SECTION I -- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identity (As Used on Label and List) SOYGOLD 2500 RINSEABLE SOLVENT - EXPERIMENTAL		<i>Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.</i>	
Chemical Name: C ₁₆ -C ₁₈ , C ₁₈ Unsaturated Ethoxylated Methyl Ester/Surfactant Blend		Synonym Name: Rinseable Solvent, Soy Methyl Ester/Surfactant Cleaner Concentrate	
Another Exclusive Product of: AG Environmental Products, L.L.C.		Emergency Telephone Number 402-496-6688 Chemtrec 800-424-9300	
Address (Number, Street, City, State, and ZIP Code) 12700 West Dodge Road Omaha, NE 68154		Telephone Number for Information 1-800-599-9209	
		Date Prepared February 4, 2005	

SECTION II -- COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Specific Chemical Identity, Common Name(s))	CAS No.	OSHA PEL	ACGIH-TLV	Other Limits Recommended	%(Opt.)
In accordance with 29 CFR 1910.1200, this product does not contain sufficient concentrations of any substances defined as hazardous by this standard					

There are no exposure limits established for this product.

SECTION III -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW – **Caution! May Cause Eye Irritation.** A light yellow liquid that may cause eye and skin irritation. No hazard if spilled and no unusual hazard if involved in a fire. Slippery, can cause fall if spilled and walked on.

POTENTIAL HEALTH EFFECTS –

EYES – May cause eye irritation.

SKIN – May cause skin irritation.

INHALATION – Exposure via inhalation not likely. No hazard in normal industrial use.

INGESTION – No significant adverse effects are expected upon ingestion of the products.

SECTION IV -- FIRST AID MEASURES

EYES – In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists get medical attention.

SKIN – In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. If irritation persists get medical attention. Wash clothing before reuse.

INHALATION – No need for first aid is anticipated not likely exposure route.

INGESTION – No need for first aid is anticipated if material is swallowed.

SECTION V -- FIRE FIGHTING MEASURES

Flash Point (Method Used) >160 C° (D93 Flash Point – Pensky Martens Closed Cup)	Flammable Limits No Data	LEL No Data	UEL No Data
---	------------------------------------	-----------------------	-----------------------

Extinguishing Media -

Not usually necessary as this product does not readily support combustion. Use media appropriate for fire's fuel source. CO₂, dry chemical, foam.

Special Fire Fighting Procedures – Cool exposed equipment with water spray until well after fire is out. Do not scatter spilled material with high pressure water streams. Dike fire control water for later disposal. Self contained breathing apparatus and structural firefighter's clothing will provide limited protection.

Unusual Fire and Explosion Hazards – None Expected.

SECTION VI -- ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Caution, slip hazard. Wipe up small spills promptly. Use a cloth or other absorbant material.

LARGE SPILL: Isolate area. Dike area to prevent spreading. Stay upwind. Wear protective gear as required. Pick up on absorbent material. Put in suitable container for proper disposal.

SECTION VII -- HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

STORAGE: Store indoors in a dry area. Follow label directions carefully. Keep out of reach of children. Keep container tightly sealed when not in use.

Do not contaminate water or feed by use or storage. Use from original container only. Do not store with fertilizers, seeds, insecticides or fungicides.

SECTION VIII -- EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection (Specify Type) – Use with adequate ventilation. Use NIOSH/MSHA approved respirator if PELs or TLVs are exceeded.

Engineering Controls	Local Exhaust	Not usually needed	Special	None
	Mechanical (General)	Yes	Other	None
Protective Gloves - Impervious			Eye Protection - Safety glasses or goggles	

Other Protective Clothing or Equipment -

Not usually necessary. If direct contact is possible, wear apron, boots, face shield, etc. as needed.

Work/Hygienic Practices -

Follow label instructions. Wash hands after use and before eating, drinking, smoking, using restrooms, etc.

SECTION IX -- PHYSICAL AND CHEMICAL PROPERTIES				
Boiling Point	No Data	Specific Gravity (H ₂ O = 1)	@77°F / 25°C	0.93
Vapor Pressure (mm-Hg @ 68° F)	No Data	Melting Point		No Data
Vapor Density (AIR = 1)	Greater than one (1)	Evaporation Rate (Butyl Acetate = 1)		No Data
Solubility in Water	Partially Soluble	pH		NA
Appearance and Odor - A yellow liquid with a faint sweet odor.		VOC's—No Data		10 gm/l
SECTION X -- STABILITY AND REACTIVITY				
Chemical Stability	Stable	Conditions to Avoid – None known		
Incompatibility (Materials to Avoid) - Strong oxidizing and reducing agents, strong alkalis and strong acids				
Hazardous Decomposition or Byproducts - Carbon dioxide, carbon monoxide, smoke, soot and various organic oxidation by-products.				
Hazardous Polymerization	Will Not Occur	Conditions to Avoid - NA		
SECTION XI -- TOXICOLOGICAL INFORMATION				
Ingestion LD ₅₀	No Data	Acute Dermal LD ₅₀	No Data	
Acute Oral LD ₅₀	No Data	Acute Inhalation LC ₅₀	No Data	
SECTION XII -- ECOLOGICAL INFORMATION				
No Data				
SECTION XIII -- DISPOSAL CONSIDERATIONS				
If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.				
SECTION XIV -- TRANSPORT INFORMATION (Not meant to be all inclusive)				
Domestic Highway		Domestic Air Shipments		
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Fatty Methyl Ester C ₁₆ -C ₁₈ Ethoxylate)		Proper Shipping Name: Unknown		
Hazard Class/Subsidiary Hazard:	Class 9	Hazard Class/Subsidiary Hazard:	Unknown	
UN/NA No.:	3082	UN/NA No.:	Unknown	
Label Required:	None	Label Required:	Unknown	
SECTION XV -- REGULATORY INFORMATION (Not meant to be all inclusive - selected regulations represented)				
NFPA Rating	Health 2	Fire 0	Reactivity 0	
HMS Rating	Health 2	Flammability 0	Reactivity 0	
U.S. FEDERAL REGULATIONS:				
OSHA: There are no exposure limits established for this product. Not hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).				
CERCLA: SARA TITLE III SECTION 311/312 HAZARD CLASSES:				
Fire	None Noted			
Acute Health	None Noted			
Reactive	None Noted			
Chronic Health	None Noted			
Release of Pressure	None Noted			
SARA TITLE III SECTION 313:				
This product is not known to contain any compound listed and in quantities requiring reporting under SARA Title III Section 313.				
TSCA: NA				
SNAP: NA.				
HAPS: Not listed.				
INTERNATIONAL REGULATIONS:				
CANADIAN WHMIS:				
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All components of this product are on the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.				
EINECS: All components of this product are on the European Inventory of Existing Commercial Chemical Substances.				
STATE REGULATIONS:				
STATE RIGHT-TO-KNOW REGULATIONS: Any substance listed as hazardous under labor statutes by the States of California, Florida, Illinois, Michigan, New Jersey, Ohio, Pennsylvania or Texas is described in Section II above if known present in regulated concentrations.				
CALIFORNIA PROPOSITION 65: This product is not known to contain any material listed under California's Proposition 65.				
SECTION XVI -- OTHER INFORMATION				
MSDS Status: Revised Section(s):				

WARNING! The use of this product is beyond the control of the manufacturer and distributor; therefore, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The user must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials. The manufacturer and distributor warrant only that this product meets the specifications for such product. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, PRODUCTIVENESS, OR ANY OTHER MATTER OF THIS PRODUCT. THE MANUFACTURER AND DISTRIBUTOR SHALL BE IN NO WAY RESPONSIBLE FOR THE PROPER USE OF THIS PRODUCT. The sole and exclusive remedy against the manufacturer and distributor for breach of warranty shall be reimbursement of the purchase price of the product in the event that a defective condition of the product shall be found to exist. NO OTHER REMEDY (INCLUDING BUT NOT LIMITED TO INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR INJURY TO PERSON OR PROPERTY OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE.



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 08/05/2002
Date Updated: 11/14/2000
Version: 1.20

Section 1 - Product and Company Information

Product Name	METHYL ACETATE, ANHYDROUS, 99.5%
Product Number	296996
Brand	Aldrich Chemical
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO 63103 US
Technical Phone:	314 771 5765
Fax:	800 325 5052
Emergency Phone:	414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
METHYL ACETATE	79-20-9	No
Formula	C3H6O2	
Synonyms	Acetate de methyle (French), Devoton, Ethyl ester of monoacetic acid, Methylacetaat (Dutch), Methylacetat (German), Methyl acetate (ACGIH/OSHA), Methyl (acetate de) (French), Methyl ester kyseliny octove (Czech), Methyl ethanoate, Metile (acetato di) (Italian), Octan metylu (Polish), -ereton	

Section 3 - Hazards Identification

Emergency Overview

Flammable (USA) Highly Flammable (EU), Irritant.
Highly flammable. Irritating to eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
Target organ(s): Eyes, Kidneys.

HMS Rating

Health: 1* Flammability: 3 Reactivity: 1

NFPA Rating

Health: 1 Flammability: 3 Reactivity: 1

*additional chronic hazards present. For additional information on toxicity please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

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

Dermal Exposure

In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.

Flash Point: -60.8 °F -16 °C

Explosion Limits: Lower: 3.1 % Upper: 16 %

Autoignition Temp: 502 °C **Flammability:** Yes

Extinguishing Media**Suitable**

Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting**Protective Equipment**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting

Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures**Procedure to be Followed in Case of Leak or Spill**

Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage**Handling****User Exposure**

Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage**Suitable**

Keep container closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Special Requirements

Protect from moisture.

Section 8 - Exposure Controls / PPE**Engineering Controls**

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

Personal Protective Equipment

Respiratory
NIOSH/MSHA-approved respirator
Hand
Compatible chemical-resistant gloves
Eye
Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Exposure Limits, RTECS

Country	Source	Type	Value	Remarks
USA	ACGIH	STEL	757 MG/M3 (250 PPM)	
USA	ACGIH	TWA	606 MG/M3 (200 PPM)	
USA	MSHA Standard	TWA	200 PPM (610 MG/M3)	
USA	OSHA	PEL	8H TWA 200 PPM (610 MG/M3)	
New Zealand	OEL			
USA	NIOSH	TWA STEL	200 PPM 250 PPM	check ACGIH TLV

Section 9 - Physical/Chemical Properties

Appearance
Physical State: Clear liquid
Color: Colorless

Molecular Weight: 74.08 AMU

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	56 - 58 °C	
MP/MP Range	-98 °C	
Freezing Point	N/A	
Vapor Pressure	165 mmHg	20 °C
Vapor Density	2.55 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.934 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	-60 B °F	
Flash Point °C	-16 °C	
Explosion Limits	Lower: 3.1 % Upper: 16 %	
Autoignition Temp	502 °C	
Refractive Index	1.382	
Solubility	N/A	

Section 10 - Stability and Reactivity

Stability
Stable
Stable
Conditions to Avoid
Protect from moisture.

Materials to Avoid
Strong oxidizing agents

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact
Causes skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes eye irritation.

Inhalation
May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Target Organ(s) or System(s)
Eyes, Kidneys, Central nervous system.

Signs and Symptoms of Exposure
Exposure can cause: Narcotic effect. This product is metabolized into formic acid. Humans and other primates metabolize formic acid more slowly than do rodents. Formic acid can build up in the body producing toxic effects possibly leading to death; therefore, data from studies in rodents may have limited relevance for human risk assessment.

RTECS Number: A19100000

Toxicity Data

Oral - Rat: > 5,000 mg/kg (LD50)

Oral - Rabbit: 3,705 mg/kg (LD50)

Skin - Rabbit: > 5,000 mg/kg (LD50)

Intraduodenal - Rabbit: 3700 MG/KG (LD50)

Irritation Data

Skin - Rabbit: 500 mg 24H
Remarks: Mild irritation effect

Skin - Rabbit: 20 mg 24H
Remarks: Moderate irritation effect

Eyes - Rabbit: 100 mg 24H
Remarks: Moderate irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Methyl acetate
UN#: 1231
Class: 3
Packing Group: Packing Group II
PIH: Not PIH

IATA

Proper Shipping Name: Methyl acetate
IATA Number: 1231
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: F+ Xi

Indication of Danger

Highly Flammable, Irritant.

Risk Statements

R: 11 36 66 67

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Safety Statements

S: 16 26 29 33

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges.

US Classification and Label Text

Indication of Danger

Flammable (USA) Highly Flammable (EU) Irritant.

Risk Statements

Highly flammable. Irritating to eyes and skin. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

Safety Statements

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Target organ(s): Eyes, Kidneys.

United States Regulatory Information

Listed: No

TSCA Inventory Item: Yes

Section 16 - Other Information

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2002 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

Low-VOC Cleaner Tested at Huhtamaki

PRODUCT NAME: FORMULA 815 MX
PRODUCT NUMBER: 111005

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MATERIAL SAFETY DATA SHEET

Per 29 CFR 1910.1200

DATE PREPARED : 5/21/03

SECTION I.

BRULIN & COMPANY. INC. P.O. BOX 270, INDIANAPOLIS, IN 46206-0270 (317) 923-3211

WEST COAST FACTORY
Richmond, California

24 HOUR EMERGENCY NUMBER
CHEMTREC 1-800-424-9300

IDENTITY (As listed on label):
FORMULA 815 MX

Health: 1
HMIS HAZARD RATINGS: Flammability: 0
Reactivity: 0

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components (Specific Chemical Identity: Common Name(s))	CAS #	OSHA PEL	ACGIH TLV-TWA	OTHER LIMITS RECOMMENDED	PERCENT
Ethanolamine, 2-Aminoethanol, Monoethanolamine	141-43-5	3 PPM	3 PPM	STEL 6 PPM	1-5

SECTION 313 SUPPLIER NOTIFICATION

The toxic chemical(s) listed above which are marked with an (*) are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. Not all chemicals subject to Section 313 of EPCRA appear on the OSHA Floor List of Hazardous Chemicals.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 212 F
Vapor Pressure (mm Hg): Ethanolamine 0.2@68F
Vapor Density (Air=1): Ethanolamine 2.1
Solubility in Water: Complete
Appearance and Odor: Blue green liquid, citrus odor.

Specific Gravity (H₂O=1): 1.076
Melting Point: Approx. 30 F
Evaporation Rate (water=1): 1.0

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): None
Flammable Limits LEL NA UEL NA
Extinguishing Media: Not Applicable
Special Fire Fighting Procedures: None
Unusual Fire and Explosion Hazards: None

PRODUCT NAME: FORMULA 815 MX

PRODUCT NUMBER: 111005

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SECTION V - REACTIVITY DATA

Stability Unstable ___ Stable X

Conditions to Avoid: Freezing

Incompatibility (Materials to Avoid): Strong oxidizers and acids.

Hazardous Decomposition or Byproducts: Thermal decomposition can produce carbon monoxide, carbon dioxide, nitrogen oxides.

Hazardous Polymerization: May Occur ___ May Not Occur X

Conditions to Avoid: None

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry: Ingestion? Yes Skin? Yes Inhalation? Yes Eyes?

Health Hazards (Acute and Chronic): Eye - Direct contact may cause irritation. Ingestion - May cause gastrointestinal irritation and irritation of mouth and throat. Skin - Prolonged or repeated contact may cause irritation. Inhalation - Excessive exposure may cause respiratory irritation.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Signs and Symptoms of Exposure: Eye contact may cause irritation, seen as redness and swelling. Prolonged skin contact may cause irritation, seen as redness. Excessive inhalation of mists may be irritating and cause coughing and discomfort in the nose throat and chest. Ingestion may cause pain or discomfort in the mouth, throat, and stomach.

Medical Conditions Generally Aggravated by Exposure: Ethanolamine may aggravate asthma and inflammatory or fibrotic pulmonary disease. May also aggravate an existing dermatitis.

Emergency & First Aid Procedures:

Eye Contact: Flush with large amounts of water for at least 15 minutes lifting upper & lower lids occasionally. Get medical attention.

Inhalation: If affected, remove to fresh air.

Skin Contact: Wash with mild soap and water. Remove contaminated clothing and launder before reuse.

Ingestion: If conscious, dilute by giving at least two glasses of water. Call a physician or local poison control center immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Absorb on solid absorbent and shovel into containers for disposal.

Waste Disposal Method: Dispose of according to Federal, State and Local Laws and 40 CFR.

Precautions to be Taken in Handling and Storing: Store between 40 and 120 F.

SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type): Not normally required. Use NIOSH-MSHA approved respirator if TLV of Ethanolamine is exceeded.

Ventilation: Mechanical (General): Normally Sufficient

Protective Gloves: Neoprene or butyl rubber on prolonged contact.

Eye Protection: Goggles or safety glasses when handling concentrate

Other Protective Clothing or Equipment: None

Work/Hygienic Practices: Avoid breathing spray mist.