Material Safety Data Sheet

Product Name: **Blue Indicating Liquid**
Product Part Number: **6378**

This product is a mixture of two or more chemicals as defined under O.S.H.A. standard 29 CFR 1910.1200. An individual MSDS for each chemical ingredient which comprises 1% or greater of the mixture (for Carcinogens concentrations of 0.1% or greater) is included with and is considered as part of the complete material safety data sheet.

Chemical Ingredient No. 1

Common Name: ..... Mineral Seal Oil
Chemical Name: ..... N/A
Chemical Formula: ..... N/A
Percent of Mixture (by volume): ..... 75 - 85%
Manufacturer: ..... Ashland Chemical Co.
MSDS: ..... Attached

Chemical Ingredient No. 2

Common Name: Diazene-42
Chemical Family: ..... Brominated ethylbenzene isomers
Percent of Mixture (by volume): ..... 15 - 25%
Manufacturer: ..... Diaz Chemical Corp.
MSDS: ..... Attached

Chemical Ingredient No. 3

Common Name: ..... Blue Dye
Percent of Mixture (by volume): ..... Less than 1%

The information herein is provided in good faith, but no warranty, either expressed or implied, is made by King Engineering Corporation.

KING ENGINEERING CORPORATION
Since 1937
Box 1228, Ann Arbor, Michigan 48106-1228 U.S.A.
3201 South State Street, Ann Arbor, Michigan 48108-1625 U.S.A.
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Ashland Chemical Company
DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333
24-HOUR EMERGENCY TELEPHONE (606) 324-1133

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

****

Product Name: MINERAL SEAL OIL
CAS NUMBER: 64742-06-9

Data Sheet No: 0000592-006
Prepared: 05/24/88
Supersedes: 11/17/87

05 50 027 4962920-

KING ENGINEERING
3201 SOUTH STATE STREET
ANN ARBOR MI 48106

PRODUCT: 2524000
INVOICE: 991688
INVOICE DATE: 09/23/87
TO: SAME

ATTN: PLANT MGR./SAFETY DIR.

SECTION I PRODUCT IDENTIFICATION

General or Generic ID: ALIPHATIC HYDROCARBON

DOT Hazard Classification: NOT APPLICABLE

SECTION II-COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
ALIPHATIC PETROLEUM DISTILLATES CAS #: 64742-06-9	>95	5 MG/M3	5 MG/M3	

SECTION III-PHYSICAL DATA

Boiling Point	for PRODUCT	390.00 - 520.00 Deg F (198.88 - 271.11 Deg C) @ 760.00 mm Hg
Vapor Pressure	for PRODUCT	< 0.01 mm Hg @ 68.00 Deg F (20.00 Deg C)
SPecific Vapor Density		HEAVIER THAN AIR
SPecific Gravity		.840 - .816 @ 60.00 Deg F (15.55 Deg C)
Percent Volatiles	NOT APPLICABLE	
Evaporation Rate	(N-BUTYL ACETATE = 1)	< .01

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT(COC) 240.0 - 275.0 Deg F (115.6 - 135.0 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - .9%

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

NFPA CODES: HEALTH- 0 FLAMMABILITY- 2 REACTIVITY- 0

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL 5 MG/M3

THRESHOLD LIMIT VALUE 5 MG/M3

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - MAY CAUSE IRRITATION.
SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
BREATHING - OF MIST CAN CAUSE IRRITATION OF NASAL AND RESPIRATORY PASSAGES.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING, KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF

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CONTINUED ON PAGE: 2

SECTION V-HEALTH HAZARD DATA (Continued)

BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

THIS PRODUCT IS A PARAFFINIC PETROLEUM OIL SIMILAR IN NATURE TO THE MINERAL SEAL OIL WHICH EXXON COMPANY REPORTED TO THE EPA UNDER SECTION 8(E) OF THE TOXIC SUBSTANCE CONTROL ACT. THE REPORT WAS SUBMITTED BASED ON AN ONGOING MOUSE SKIN PAINTING STUDY WHICH SHOWED 8 OF AN ORIGINAL 50 ANIMALS DEVELOPED OBSERVABLE SKIN TUMORS.

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

SECTION VII-SPILL OR LEAK PROCEDURES

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

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

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

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

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, POLYETHYLENE

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED.SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

Ashland Chemical Company
DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333
24-HOUR EMERGENCY TELEPHONE (606) 324-1133

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I
PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II
COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional information may be found in Section V. Other components may be listed if deemed appropriate.

Identities of components listed generically are declared trade secret.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

SECTION III
PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

SECTION IV
FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION V
HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VI
REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VII
SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mendatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List)	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.
DIAZENE-42	

Section I

N/A= Not Available

Manufacturer's Name DIAZ CHEMICAL CORPORATION	Emergency Telephone Number (716) 638-6321
Address (Number, Street, City, State, and ZIP Code) P.O.BOX 194	Telephone Number for Information (716) 638-6321
40JACKSON STREET	Date Prepared May 28, 1986
HOLLEY, NEW YORK 14470	Signature of Preparer (optional) Marie L. MacClare

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
BROMOETHYLBENZENES CAS# 1585-07-5	N/A	N/A	N/A	
DIBROMOETHYLBENZENES CAS# 30812-87-4	N/A	N/A	N/A	
TRIBROMOETHYLBENZENES CAS# 31195-17-2	N/A	N/A	N/A	

Section III — Physical/Chemical Characteristics

Boiling Point 390-580°F	200-300°C	Specific Gravity (H_2O - 1) $^{15}/_{15}$°C	1.73-1.75
Vapor Pressure (mm Hg.)	N/A	Melting Point less than 0°C	N/A
Vapor Density (AIR - 1)	9.4	Evaporation Rate (Butyl Acatate - 1)	less than

Solubility in Water
Negligible

Appeanance and Odor
Clear liquid, colorless to light yellow, mothball odor

Section IV — Fire and Explosion Hazard Data

Flesh Point (Method Used) NONE, greater than 200°F	Flammable Limits N/A	LEL N/A	UEL N/A

Extinguishing Media
WATER, CO_2, CHEMICAL FOAM

Special Fire Fighting Procedures
NONE

Unususl Fire and Explosion Hazards
NONE

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid: Avoid contact with finely divided reducing metals, such as powdered aluminum
	Stable	X	

Incompatibility (*Materials to Avoid*): Avoid contact with finely divided reducing metals

Hazardous Decomposition or Byproducts: Hydrogen Bromide, Carbon Monoxide, Carbon Dioxide

Hazardous olymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? X Skin? X Ingestion? X

Health Hazards (*Acute and Chronic*): INHALATION- Probable nasal irritation possible liver and kidney damage upon repeated or long term contact.

SKIN-May cause irritation

Carcinogenicity: N/A NTP? NO IARC Monographs? NO OSHA Regulated? NO

Signs and Symptoms of Exposure: Nasal or skin irritation

Medical Conditions Generally Aggravated by Exposure: N/A

Emergency and First Aid Procedures: SKIN-Wash with soap and water. EYE-Irrigate with large volumes of water. INGESTION-Induce vomiting. INHALATION-Remove to fresh air. See a physician.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: Position pail or drum to minimize leak. Absorb spilled material in absorbant such as clay, or other appropriate material.

Waste Disposal Method: LIQUID- Incineration at Hazardous Waste Incineration Facility

SOLIDS (from spill clean-up)- Landfill at Secure Chemical Landfill

Precautions to Be Taken in Handling and Storing: Practice reasonable care to avoid skin and eye contact and to avoid breathing vapors.

Other Precautions: N/A

Section VIII — Control Measures

Respiratory Protection (*Specify Type*): Organic Vapor Cannister

Ventilation	Local Exhaust: "Adequate" Ventilation	Special: N/A	
	Mechanical (*General*): N/A	Other: N/A	

Protective Gloves: Rubber Gloves Eye Protection: Safety Glasses

Other Protective Clothing or Equipment: Coveralls