

#1,000 pd.  
5-19-89  
Receipt # 117618

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207  
(904) 396-8959



AC 05-105271

BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
ERNEST FREY  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Product Development & Engineering [ ] New<sup>1</sup> [X] Existing<sup>1</sup>  
Facility  
APPLICATION TYPE: [ ] Construction [X] Operation [ ] Modification

COMPANY NAME: Sea Ray Boats, INC COUNTY: Brevard

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lamination Area

SOURCE LOCATION: Street 200 Sea Ray Drive City Merritt Island

UTM: East \_\_\_\_\_ North \_\_\_\_\_  
Latitude 28 ° 24 ' 22 "N Longitude 80 ° 42 ' 08 "W

APPLICANT NAME AND TITLE: Sea Ray Boats, INC

APPLICANT ADDRESS: 2600 Sea Ray Blvd., Knoxville, TN 37914

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of Sea Ray Boats, INC

I certify that the statements made in this application for a Boat Devlop. & Eng. Fac. permit are true, correct and complete to the best of my knowledge and belief. Further I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

\*Attach letter of authorization

Signed: John Cronkhite

John Cronkhite, Vice- President  
Name and Title (Please Type)

Date: 4/14/89 Telephone No. (615) 522-4181

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

<sup>1</sup> See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed \_\_\_\_\_

G. E. Cantelou, Jr. P. E.  
Name (Please Type)

Cantelou Associates, INC  
Company Name (Please Type)

P. O. Box 3102, Aiken, SC 29802  
Mailing Address (Please Type)

Florida Registration No. 18006 Date: Apr 1989 Telephone No. (803) 648-9300

SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The existing facility engineers and produces prototypes for fiberglass  
pleasure boats. The complete process is described in detail under  
Section V: Supplemental Requirements, Article 7.

Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction N/A Completion of Construction N/A

Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

3840

E. Requested permitted equipment operating time: hrs/day 16; days/wk 5; wks/yr 48;  
if power plant, hrs/yr \_\_\_\_\_; if seasonal, describe: N/A

F. If this is a new source or major modification, answer the following questions.  
(Yes or No) DOES NOT APPLY

- 1. Is this source in a non-attainment area for a particular pollutant? \_\_\_\_\_
  - a. If yes, has "offset" been applied? \_\_\_\_\_
  - b. If yes, has "Lowest Achievable Emission Rate" been applied? \_\_\_\_\_
  - c. If yes, list non-attainment pollutants. \_\_\_\_\_
- 2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. \_\_\_\_\_
- 3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. \_\_\_\_\_
- 4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? \_\_\_\_\_
- 5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? \_\_\_\_\_

- H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? DOES NOT APPLY \_\_\_\_\_
  - a. If yes, for what pollutants? \_\_\_\_\_
  - b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Resin (AME/RCI)	Styrene	42 / 50	24.2 / 81.1	Step 1
Gelcoat	Styrene	35	18.3	Step 1, 2, 3
Gelcoat	Methyl Methacralate	5	18.3	Step 1, 2, 3
Adhesive	1,1,1-Tri-chloroethane	68	0.21	Step 4
Adhesive	Toluene	8	0.21	Step 4
Acetone	Acetone	100	15.1	Step 4
Paint	* Misc	100	0.13	Step 1,2

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): \_\_\_\_\_

2. Product Weight (lbs/hr): \_\_\_\_\_

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission <sup>1</sup>		Allowed <sup>2</sup> Emission Rate per Rule 17-2	Allowable <sup>3</sup> Emission lbs/hr	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Styrene	5.0	9.53	NOT DETERMINED	43,680	21.8	Step 1,2,3	
Methyl Methacralate	.92	1.76	NOT DETERMINED	15,375	7.7	Step 1,2,3	
1,1,1-Tri-chloroethane	0.14	0.27	NOT DETERMINED	1,248	0.62	Step 4	
Toluene	0.02	0.03	NOT DETERMINED	147	0.07	Step 4	
Acetone	15.1	<del>13.6</del> 38.6	NOT DETERMINED	94,523	47.3	Step 4	
* Misc	0.13	0.25	NOT DETERMINED	1,136	0.57	Step 1,2	

See Section V, Item 2.

Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

Calculated from operating rate and applicable standard.

Emission, if source operated without control (See Section V, Item 3).

P. D. & E. uses various amounts of several types of paint. Due to the large number of components, they are considered together in a "Misc" category. See the attached MSDS's for individual components.

R Form 17-1.202(1)

Effective November 30, 1982

\* There are other products used but emissions would be insignificant

D. Control Devices: (See Section V, Item 4) DOES NOT APPLY

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels DOES NOT APPLY

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_

Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_

Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal

Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average \_\_\_\_\_ Maximum \_\_\_\_\_

G. Indicate liquid or solid wastes generated and method of disposal.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: DOES NOT APPLY ft. Stack Diameter: \_\_\_\_\_ ft.  
 Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM Gas Exit Temperature: \_\_\_\_\_ °F.  
 Water Vapor Content: \_\_\_\_\_ % Velocity: \_\_\_\_\_ FPS

SECTION IV: INCINERATOR INFORMATION

DOES NOT APPLY

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ day/wk \_\_\_\_\_ wks/yr. \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner

Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS \* SEE ATTACHMENT I

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY DOES NOT APPLY

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes  No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

- B. Has EPA declared the best available control technology for this class of sources (if yes, attach copy)

Yes  No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology?

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

- D. Describe the existing control and treatment technology (if any).

1. Control Device/System:

2. Operating Principles:

3. Efficiency:\*

4. Capital Costs:

Explain method of determining



5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

- a. Height: ft.    b. Diameter: ft.
- c. Flow Rate: ACFM    d. Temperature: °F.
- e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

- a. Control Device: b. Operating Principles:
- c. Efficiency:<sup>1</sup> d. Capital Cost:
- e. Useful Life: f. Operating Cost:
- g. Energy:<sup>2</sup> h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device: b. Operating Principles:
- c. Efficiency:<sup>1</sup> d. Capital Cost:
- e. Useful Life: f. Operating Cost:
- g. Energy:<sup>2</sup> h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:<sup>1</sup>

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:<sup>2</sup>

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

- (5) Environmental Manager:
- (6) Telephone No.:
- (7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration

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(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration

---



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(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION DOES NOT APPLY**

A. Company Monitored Data

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub>\* \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

\*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 [ ] Yes [ ] No [ ] Unknown

3. Meteorological Data Used for Air Quality Modeling

1. \_\_\_\_\_ Year(s) of data from \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ to \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
   month day year          month day year
2. Surface data obtained from (location)\_\_\_\_\_
3. Upper air (mixing height) data obtained from (location)\_\_\_\_\_
4. Stability wind rose (STAR) data obtained from (location)\_\_\_\_\_

4. Computer Models Used

1. \_\_\_\_\_ Modified? If yes, attach description.
2. \_\_\_\_\_ Modified? If yes, attach description.
3. \_\_\_\_\_ Modified? If yes, attach description.
4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

5. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO <sup>2</sup>	_____ grams/sec

6. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

- Attach all other information supportive to the PSD review.
- Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.
- Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT I

SECTION V: SUPPLEMENTAL REQUIREMENTS

1. Not required.
2. See Attachment II.
3. Attached see Exhibit "A", Part 1 - excerpt from Cal-OSHA study indicating the emission factor for styrene from resins is 6%, and Emission Factors indicating the emission factor for gelcoat is approx. 30%, Part 2 - Product data sheets, and Part 3 - Potential Emissions Calculations.
4. Not required.
5. Not required.
6. See Exhibit "B".
7. See Exhibit "C".
8. See Exhibit "D".
9. Pending notice from DER.
10. Does Not Apply.

ATTACHMENT II      PRODUCT DEVELOPMENT & ENGINEERING  
CALCULATIONS

ACTUAL UTILIZATION RATE (1988)

RESIN: RCI                      311,500 #/yr  
----- = 81.1 #/hr  
48 wk/yr X 5 day/wk X 16 hr/day

RESIN: AME                      93,065 #/yr  
----- = 24.2 #/hr  
48 wk/yr X 5 day/wk X 16 hr/day

GEL COAT:                      70,423 #/yr  
----- = 18.3 #/hr  
48 wk/yr X 5 day/wk X 16 hr/day

ACETONE:                      217,403 #/yr (used) - 109,065 #/yr (recycled) =  
                                    108,338 #/yr  
----- = 18.8 #/hr  
48 wk/yr X 5 day/wk X 24 hr/day

PAINT:                              500 #/yr  
----- = 0.13 #/hr  
48 wk/yr X 5 day/wk X 16 hr/day

ADHESIVE:                      800 #/yr  
----- = 0.21 #/hr  
48 wk/yr X 5 day/wk X 16 hr/day

\* Hourly emissions based on 16 hour work day - 8 hour first  
shift and 8 hour skeleton shift in lamination

\*\* These calculations are based on a yearly average, but in  
September Res-Away was introduced as a clearer. Before  
September approximately 775 gallons/week of acetone was  
being used. After Res-Away was introduced approximately  
500 gallons/week of acetone were used and 225 gallons/week  
of acetone were recycled. Therefore, future utilization  
rates based on these numbers would be:

ACETONE:                      87,252 #/yr  
----- = 15.1 #/hr  
48 wk/yr X 5 day/wk X 24 hr/day

ATTACHMENT II

ACTUAL EMISSIONS FOR 1988

EMISSIONS = (EMISSION RATE)(UTILIZATION RATE)(COMPONENT PERCENTAGE)

STRENE: RESIN (AME) (.06)( 24.2 #/hr)(0.42)  
RESIN (RCI) (.06)( 81.1 #/hr)(0.50)  
GEL COAT + (.30)( 18.3 #/hr)(0.35) = 5.0 #/hr = 9.53 T/yr

METHYL METHACRALATE:  
GEL COAT (1.0)( 18.3 #/hr)(0.05) = 0.92 #/hr = 1.76 T/yr

ACETONE: 217,403 #/yr (used) - 109,065 #/yr (recycled) =  
= 28.2 #/hr = 54.2 T/yr

1,1,1-TRICHLOROETHANE:  
(1.0)( 0.21 #/hr)(0.68) = .1428 #/hr = 0.27 T/yr

TOLUENE: (1.0)( 0.21 #/hr)(0.08) = .0168 #/hr = .032 T/yr


MISC: \*\*\* (1.0)( 0.13 #/hr)(1.00) = 0.13 #/hr = 0.25 T/yr

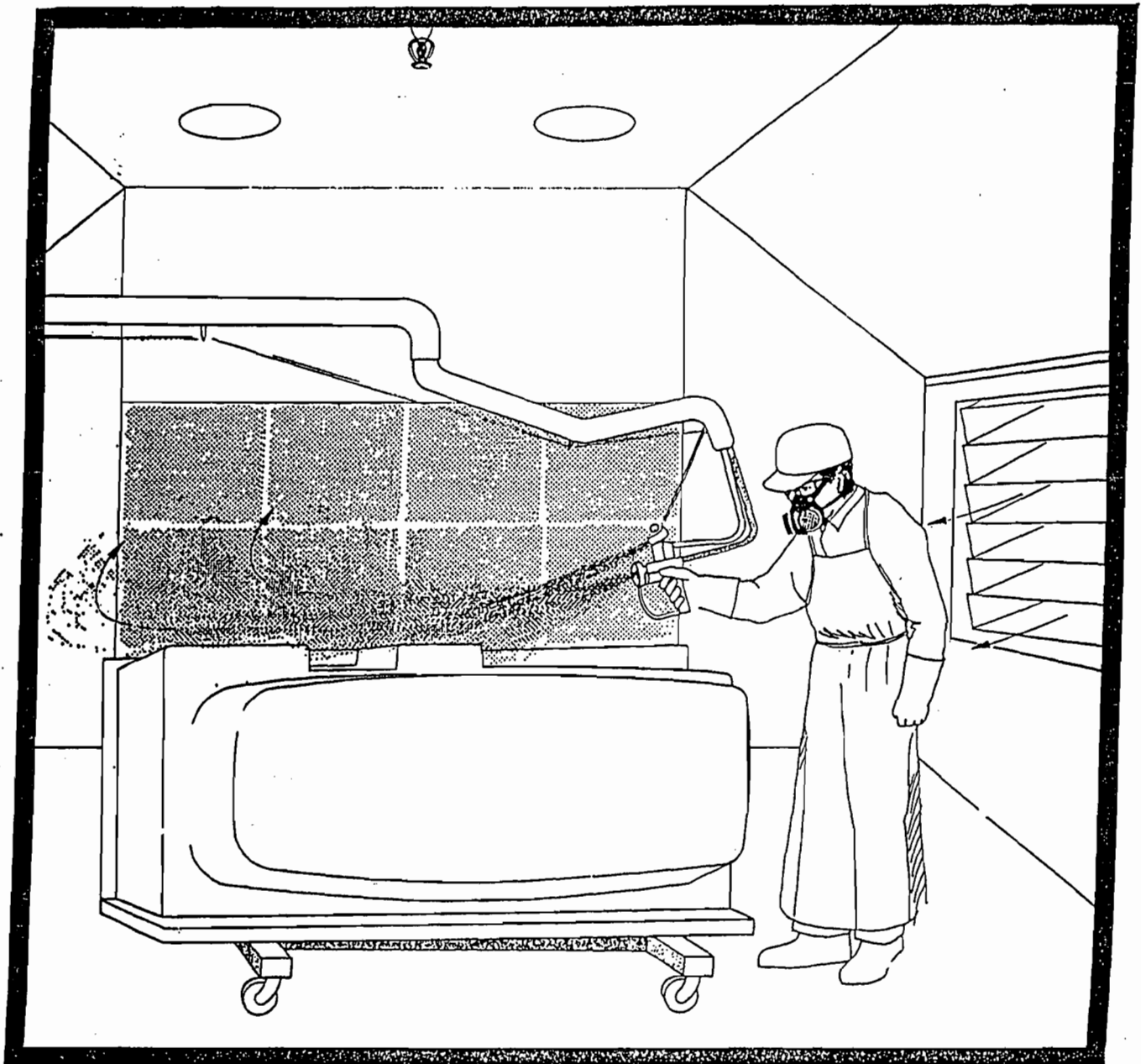
\*\* ACTUAL EMISSIONS BASED ON NEW WEEKLY USE OF ACETONE WOULD BE:

(500 GAL/WK USED) - (225 GAL/WK RECYCLED) X (6.61 #/GAL) X (48 WKS/YR) =  
87,252 #/yr = 15.1 #/hr = 43.6 T/yr

\*\*\* SEE NOTE ON PAGE 4 OF APPLICATION

# Occupational Exposures to Styrene and Other Health Hazards in the Fiberglass Reinforced Plastics Industry

A Special Studies Report by 





worker performed almost continuous spraying while standing on a portable platform that was inserted into the tank that also supported a large duct with high velocity airflow that exhausted vapors very close to the point of generation.

Two facilities, using a unique production process to ensure good secondary bonding between resin layers, also had the side effect of obtaining low ambient exposure levels from the process. After gelcoating and hand laminating the mold, the part was covered with plastic sheeting and a vacuum pulled while the part is curing. Covering the part and pulling a vacuum through the space between the part and the plastic, removes styrene vapor from the work place air and reduces employee exposure.

The majority of companies which installed some form of dilution ventilation, for example, filter banks on the walls that pull a large volume of air, were mostly ineffective. They were either too far from the source of the exposure or were defeated by lack of directionality and turbulence.

### Substitution

NIOSH estimates that approximately 6% of styrene monomer in a 40/60 polyester resin mixture vaporizes during the curing process. Methyl styrene (also called vinyl toluene) is a close chemical cousin of styrene that has a lower vapor pressure, reducing the amount of vaporization. Methyl styrene has three isomers, para, meta, or the ortho form. Two production facilities were using a resin mixture containing 60% polyester, 14% styrene and 26% para-methyl styrene.

FIGURE V.3

### Styrene and the Three Isomers of Methyl Styrene

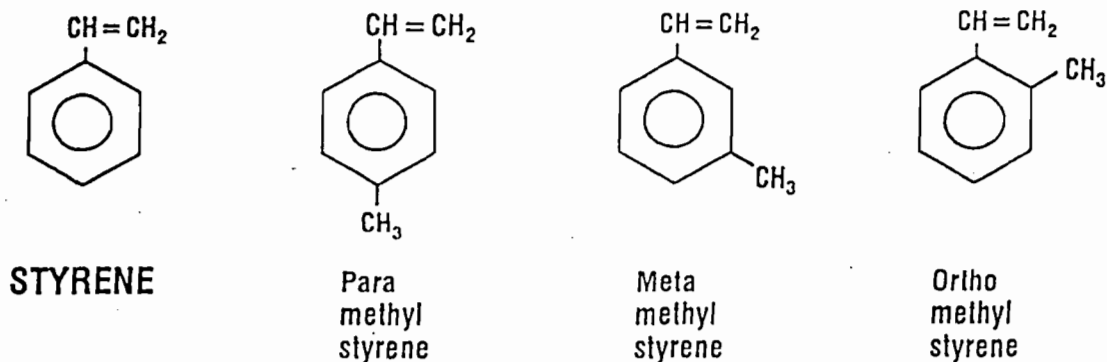


TABLE 4.12-2. EMISSION FACTORS FOR UNCONTROLLED POLYESTER RESIN  
PRODUCT FABRICATION PROCESSES<sup>a</sup>  
(100 x mass of VOC emitted/mass of monomer input)

Process	Resin		Emission Factor Rating	Gel Coat		Emission Factor Rating
	NVS	VS <sup>b</sup>		NVS	VS <sup>b</sup>	
Hand layup	5 - 10	2 - 7	C	26 - 35	8 - 25	D
Spray layup	9 - 13	3 - 9	B	26 - 35	8 - 25	B
Continuous lamination	4 - 7	1 - 5	B	c	c	---
Pultrusion <sup>d</sup>	4 - 7	1 - 5	D	c	c	---
Filament winding <sup>e</sup>	5 - 10	2 - 7	D	c	c	---
Marble casting	1 - 3	1 - 2	B	f	f	---
Closed molding <sup>g</sup>	1 - 3	1 - 2	D	c	c	---

<sup>a</sup>Reference 9. Ranges represent the variability of processes and sensitivity of emissions to process parameters. Single value factors should be selected with caution. NVS = nonvapor-suppressed resin. VS = vapor-suppressed resin.

<sup>b</sup>Factors are 30-70% of those for nonvapor-suppressed resins.

<sup>c</sup>Gel coat is not normally used in this process.

<sup>d</sup>Resin factors for the continuous lamination process are assumed to apply.

<sup>e</sup>Resin factors for the hand layup process are assumed to apply.

<sup>f</sup>Factors unavailable. However, when cast parts are subsequently sprayed with gel coat, hand and spray layup gel coat factors are assumed to apply.

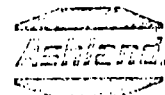
<sup>g</sup>Resin factors for marble casting, a semiclosed process, are assumed to apply.

TABLE 4.12-3. TYPICAL RESIN STYRENE PERCENTAGES

Resin Application	Resin Styrene Content <sup>a</sup> (wgt. %)
Hand layup	43
Spray layup	43
Continuous lamination	40
Filament winding	40
Marble casting	32
Closed molding	35
Gel coat	35

<sup>a</sup>May vary by at least  $\pm 5$  percentage points.

EXHIBIT "A" - PART 2



000903

AME 4000 (B-0105) AROPOL

Page: 1

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

\*\*\*\*\*

Product Name: AME 4000 (B-0105) AROPOL

SEA RAY BOATS INC  
P O BOX 542655  
MERRITT ISLAND FL 32952

03 56 021 7956600-

Data Sheet No: 0208205-002  
Prepared: 12/22/88  
Supersedes: 06/17/88

PRODUCT: 562669  
INVOICE: 042385  
INVOICE DATE: 01/18/89  
TO: SEA RAY BOATS INC  
PRODUCT DEVELOPMENT & ENGRG  
200 SEA RAY DRIVE  
MERRITT ISLAND FL 32952

ATTN: PLANT MGR./SAFETY DIR.

General or Generic ID: UNSATURATED POLYESTER RESIN

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION. SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
POLYMER *	55-60			( 1 )
STYRENE CAS #: 100-42-5	42	100 PPM	50 PPM	( 2 )

Notes:

( 1 ) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL

( 2 ) ACGIH - SHORT TERM EXPOSURE LIMIT (STEL) FOR STYRENE MONOMER IS 100 PPM. THE OSHA ACCEPTABLE CEILING CONCENTRATION IS 200 PPM. THE ACCEPTABLE MAXIMUM PEAK ABOVE THE ACCEPTANCE CEILING CONCENTRATION FOR AN 8-HOUR SHIFT IS 600 PPM FOR A MAXIMUM DURATION OF 5 MINUTES IN ANY 3 HOURS. NIOSH RECOMMENDS A LIMIT OF 50 PPM, 8-HOUR TWA; 100 PPM 15 MINUTE CEILING.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

\* THE SPECIFIC CHEMICAL NAME OF THIS COMPONENT IS BEING WITHHELD AS A TRADE SECRET.

Boiling Point	for COMPONENT( 42%)	293.40 Deg F 145.22 Deg C 760.00 mm Hg
Vapor Pressure	for COMPONENT( 42%)	5.00 mm Hg 68.00 Deg F 20.00 Deg C
Specific Vapor Density	AIR = 1	3.6
Specific Gravity		1.046 - 1.070 77.00 Deg F 25.00 Deg C
Percent Volatiles		40-45%
Evaporation Rate		SLOWER THAN ETHER
Appearance		HAZY GREEN COLORED LIQUID
State		LIQUID
Form		HOMOGENEOUS SOLUTION

FLASH POINT 73.0 - 100.0 Deg F ( 22.8 - 37.8 Deg C)

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - 1.1% UPPER - 6.1%

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 POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN

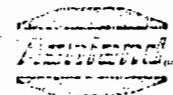
MATERIAL SAFETY  
DATA SHEET

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



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AME 4000 (B-0105) AROPOL

Page: 2

SECTION II - HAZARDOUS INFORMATION

IGNITE EXPLOSIVELY.

NFPA CODES: HEALTH- 2 FLAMMABILITY- 3 REACTIVITY- 2

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE: FOR COMPONENT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.  
 SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.  
 BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE UNCONSCIOUSNESS, AND EVEN DEATH.  
 SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY 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 BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT, SKIN ABSORPTION

EFFECTS OF CHRONIC OVEREXPOSURE: FOR COMPONENT

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAS CLASSIFIED STYRENE IN GROUP 2B (POSSIBLY CARCINOGENIC TO HUMANS). THIS CLASSIFICATION IS NOT BASED ON ANY SIGNIFICANT NEW EVIDENCE THAT STYRENE MAY BE CARCINOGENIC, BUT RATHER ON A REVISED DEFINITION FOR GROUP 2B AND CONSIDERATION OF NEW DATA ON STYRENE OXIDE. A NUMBER OF LIFETIME ANIMAL STUDIES WITH STYRENE INCLUDING THOSE CONDUCTED IN THE NCI BIOASSAY PROGRAM HAVE NOT SHOWN STYRENE TO BE CARCINOGENIC.

OVEREXPOSURE TO STYRENE HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: LIVER ABNORMALITIES, KIDNEY DAMAGE AND LUNG DAMAGE.

HAZARDOUS POLYMERIZATION: CAN OCCUR -- AVOID EXPOSURE TO EXCESSIVE HEAT, PEROXIDES AND POLYMERIZATION CATALYSTS.

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG ALKALIES., STRONG MINERAL ACIDS.

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: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

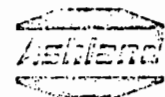
CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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: POLYVINYL ALCOHOL

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)



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MATERIAL SAFETY DATA SHEET

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Page: 3

SECTION 1: IDENTIFICATION

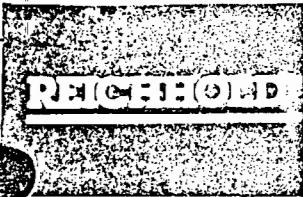
OTHER PROTECTIVE EQUIPMENT: NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

SECTION 2: HAZARD IDENTIFICATION

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 THIS DATASHEET MUST BE OBSERVED.

EXPOSURE TO AEROSOLS AND MISTS WHEN MATERIAL IS SPRAYED MAY PRESENT A GREATER RISK OF INJURY FROM COMPONENTS BECAUSE HIGHER CONCENTRATIONS ARE IN THE ATMOSPHERE THAN RESULT FROM VAPOR ALONE. PROVIDE ADEQUATE VENTILATION AND IF NECESSARY, USE RESPIRATORY PROTECTION.

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.



# MATERIAL SAFETY DATA SHEET

Information Telephone No. 904-739-2170

REICHHOLD CHEMICALS, INC.  
Reactive Polymers Division  
8540 Baycenter Road  
Jacksonville, Florida 32245

ALL CHEMICAL EMERGENCIES  
1-800-424-9300

Page 1

ISSUE DATE: 01/30/87

## SECTION I - PRODUCT IDENTIFICATION

Product Code : 33-250 Trade Name: Hydrex(TM) Polyester Resin  
C.A.S. Number: Mixture Product Class: Unsaturated Polyester

## SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits
Styrene Monomer	100-42-5	40-50	50. ppm

## SECTION III - PHYSICAL DATA

Boiling Point: 295 Deg. F. Vapor Density: Heavier than Air.  
Evap. Rate: Slower than n-Butyl Acetate. Specific Grav: 1.1  
Percent volatiles: < 50  
Appearance: Purple Opaque liquid. Pungent odor.

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 1C Flash Point: 89 Deg. F. LEL : 1.1

### -EXTINGUISHING MEDIA:

Water spray, foam, dry chemical, carbon dioxide or any Class B extinguishing agent.

### -SPECIAL FIREFIGHTING PROCEDURES:

Firefighters and others exposed to vapors or products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

### -UNUSUAL FIRE & EXPLOSION HAZARDS:

At elevated temperatures, such as in a fire, polymerization may take place. If polymerization takes place in a closed container, there is the possibility of violent rupture of the container. Product vapors may form an explosive mixture in air.

## SECTION V - HEALTH HAZARD DATA

### -PERMISSIBLE EXPOSURE LEVEL:

OSHA Exposure limits for styrene (29 CFR 1910.1000 Z-2):  
100 ppm 8-Hour Time Weighted Average (TWA).  
200 ppm - 600 ppm allowable ceiling concentration during one 5-minute period in any 3 hours.

### ACGIH Exposure limits for styrene:

50 ppm 8-Hour Time Weighted Average (TWA) (con't)

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PRODUCT CODE: 33-250

Page 2

ISSUE DATE: 01/30/87

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 SECTION V - HEALTH HAZARD DATA (cont.)  
 =====

## PERMISSIBLE EXPOSURE LEVEL: (cont.)

100 ppm allowable Short Term Exposure Level (STEL) during a 15-minute period. There should be at least 60 minutes between successive exposures at the STEL.

## EFFECTS OF OVEREXPOSURE:

SKIN: Prolonged or frequent contact may cause defatting and dryness of the skin with resultant irritation and possible dermatitis. Styrene may be absorbed through the skin in toxic amounts.

EYES: May cause irritation. Liquid splashes may result in more serious injuries. May cause lachrymation (tears).

INHALATION: Vapors may cause mucous membrane irritation and upper respiratory tract discomfort. High concentrations may result in headache, nausea, insensibility and other central nervous system effects. Repeated exposure to high concentrations may cause liver and kidney damage.

INGESTION: May cause gastrointestinal disturbances, pain and discomfort.

CARCINOGENICITY: Although there is some evidence of carcinogenicity of styrene in laboratory animals, the International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence that styrene is a human carcinogen.

## FIRST AID:

SKIN: Wash with soap and water.

EYES: Flush with copious amounts of water for 15 minutes. Seek immediate medical aid.

INHALATION: Remove victim from exposure. If victim is unconscious, administer artificial respiration and/or oxygen as needed. Seek medical aid.

INGESTION: DO NOT INDUCE VOMITING (aspiration hazard). Seek immediate medical aid.

## PRIMARY ROUTE(S) OF ENTRY:

Inhalation and Skin Absorption.

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 SECTION VI - REACTIVITY DATA  
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STABILITY: [ ] Unstable [x] Stable

HAZARDOUS POLYMERIZATION: [x] May occur [ ] Will not occur

## INCOMPATIBILITY:

Strong acids and oxidizing agents.

## CONDITIONS TO AVOID:

Heat and direct sunlight.



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## SECTION VI - REACTIVITY DATA (cont.)

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-HAZARDOUS DECOMPOSITION PRODUCTS:

Heating of this material to decomposition may cause the emission of irritating, acrid fumes.

## =====

## SECTION VII - SPILL OR LEAK PROCEDURES

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

Remove all sources of ignition. Ventilate area. Absorb spill with an absorbent material such as sawdust, vermiculite or sand and place in a closed container. If large spill, dike the area to prevent this material from entering water systems or sewers.

## -WASTE DISPOSAL METHOD:

This material has been tested and found to have a flash point below 140 F. If discarded, this material and containers should be treated as hazardous wastes based on the characteristic of ignitability as defined under the federal RCRA regulations (40 CFR 261). Disposal of this material and its container, requires compliance with applicable labeling, packaging, and record keeping standards. Extreme care should be taken to ensure that it is disposed of only in a facility permitted for disposal of hazardous wastes.

For further information, contact your state or local solid waste agency or the United States Environmental Protection Agency's RCRA hotline (800-424-0340).

## =====

## SECTION VIII - SPECIAL PROTECTION INFORMATION

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-RESPIRATORY PROTECTION:

A canister-type respirator must be worn to prevent the inhalation of vapors or spray mists when the TLV or PEL is exceeded.

## -VENTILATION:

General ventilation is required during normal use. Local ventilation may be required during certain operations to keep exposure levels below the TLV listed in Section II of this data sheet.

## -PROTECTIVE GLOVES:

Wear appropriate impervious gloves to prevent skin contact.

## -EYE PROTECTION:

Wear face shield or chemical goggles.

PRODUCT CODE: 33-250

Page 4

ISSUE DATE: 01/30/87

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SECTION VIII - SPECIAL PROTECTION INFORMATION (cont.)

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OTHER PROTECTIVE EQUIPMENT:

Wear protective clothing to prevent skin contact.

Eye wash station and safety shower should be available.

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SECTION IX - SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Avoid storage above 100 Deg. F. Avoid prolonged or repeated skin contact. Avoid inhalation of heated vapors or spray mists.

OTHER PRECAUTIONS:

Avoid improper addition of promoter and/or catalyst. A promoter and catalyst used with this product should always be mixed separately with the product and must never be mixed together.

## MATERIAL SAFETY DATA SHEET

## SECTION I - MANUFACTURERS INFORMATION

PRODUCT CODE IDENTITY: 944W969 300      PRODUCT NAME: SEA RAY WHITE  
 NAME: COOK PAINT AND VARNISH COMPANY      DATE OF MSDS: 03/28/88  
 ADDRESS: P.O. BOX 419389  
 KANSAS CITY, MO 64141-6389      EMERGENCY TELEPHONE: 816-391-6000  
 INFORMATION TELEPHONE: 816-391-6003

ATTN: SAFETY AND HEALTH OFFICER  
 SEA RAY BOAT-PDE  
 PO BOX 541257

CUSTOMER NUMBER: 546039  
 DATE PRINTED: 04/25/88

MERRIT ISLAND      FL 329541257

## SECTION II - HAZARDOUS INGREDIENTS

## STYRENE MONOMER

CAS #: 100-42-5      PERCENT: 35.000      VAPOR PRESSURE: 4.5  
 (MMHG/DEG F)

EXPOSURE LIMIT:  
 ACGIH TLV/TWA: 50 PPM (SKIN) (215 MG/CU.M.)  
 ACGIH TLV/STEL: 100 PPM (SKIN) (425 MG/CU.M.)  
 OSHA PEL: 100 PPM (425 MG/CU.M.)  
 OSHA PEL/CEILING: 200 PPM (850 MG/CU.M.)  
 OTHER: OSHA: 600 PPM/5 MIN/3 HR PEAK

TITANIUM DIOXIDE  
 SEE ACGIH TLV BOOKLET, APPENDIX D

CAS #: 13463-67-7      PERCENT: 15.000      VAPOR PRESSURE: N/A  
 (MMHG/DEG F)

EXPOSURE LIMIT:  
 ACGIH TLV/TWA: 10MG/CU.M. AS DUST, 5MG/CU.M. AS FUMES  
 OSHA PEL: 15MG/CU.M.

## SILICA, AMORPHOUS

CAS #: 7631-86-9      PERCENT: LESS THAN 5      VAPOR PRESSURE: N/A  
 (MMHG/DEG F)

EXPOSURE LIMIT:  
 ACGIH TLV/TWA: 10MG/CU.M. TOTAL DUST  
 OSHA PEL: 20M PPCF AS DUST

## ALUMINA (HYDROUS MAGNESIUM SILICATE)

CAS #: 14807-96-6      PERCENT: 10.000      VAPOR PRESSURE: N/A  
 (MMHG/DEG F)

EXPOSURE LIMIT:  
 ACGIH TLV/TWA: 2 MG/M3 RESPIRABLE DUST  
 OSHA PEL: 20 M PPCF

## METHYL METHACRYLATE

CAS #: 80-62-6      PERCENT: 5.000      VAPOR PRESSURE: 29.0  
 (MMHG/DEG F)

EXPOSURE LIMIT:  
 ACGIH TLV/TWA: 100 PPM (410 MG/CU.M.)  
 ACGIH TLV/STEL: 125 PPM (510 MG/CU.M.)  
 OSHA PEL: 100 PPM (410 MG/CU.M.)

MAXIMUM VOC NOT CONSUMED DURING CURING IS 40 GRAM/LITER (OR 230 GRAMS/SQUARE  
 FOOT OF SURFACE AREA OPEN TO AIR). MAXIMUM VOC OF UNCATALYZED RESINS AND GEL  
 COATINGS IS 600 GRAMS/LITER.

## MATERIAL SAFETY DATA SHEET

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE

## SECTION III - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE TO PRODUCT. PRIMARY ROUTES OF ENTRY ARE:

- EYE CONTACT: IRRITATION. SYMPTOMS ARE TEARING, REDNESS AND DISCOMFORT.
- SKIN CONTACT: IRRITATION. CAN CAUSE DEFATTING OF SKIN WHICH MAY LEAD TO DERMATITIS.
- INHALATION: IRRITATION TO NOSE AND THROAT. EXTENDED OR REPEATED EXPOSURE TO CONCENTRATIONS ABOVE THE RECOMMENDED EXPOSURE LIMITS MAY CAUSE BRAIN OR NERVOUS SYSTEM DEPRESSION, CAUSING DIZZINESS, HEADACHE OR NAUSEA AND IF CONTINUED INDEFINITELY, LOSS OF CONSCIOUSNESS, LIVER AND KIDNEY DAMAGE.
- REPORTS HAVE ASSOCIATED REPEATED OR PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.
- INGESTION: MAY CAUSE MOUTH, THROAT, ESOPHAGUS AND STOMACH IRRITATION, NAUSEA, VOMITING AND DIARRHEA.

MEDICAL CONDITIONS THAT MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT: PREEXISTING EYE, SKIN, LIVER, KIDNEY AND RESPIRATORY DISORDERS.

## EMERGENCY AND FIRST AID PROCEDURES:

IN CASE OF EYE CONTACT, FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION; FOR SKIN, WASH THOROUGHLY WITH SOAP AND WATER. IF AFFECTED BY INHALATION OF VAPORS OR SPRAY MIST, REMOVE TO FRESH AIR. IF SWALLOWED, GET MEDICAL ATTENTION IMMEDIATELY.

## SECTION IV - PHYSICAL DATA

BOILING POINT, DEG. F. 212 VAPOR DENSITY IS HEAVIER THAN AIR

WEIGHT PER GALLON: 10.78 EVAPORATION RATE IS SLOWER THAN ETHER

PERCENT VOLATILE BY VOLUME: 53.845

## SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: FLAMMABLE LIQUID CLASS IC

FLASH POINT SETA CLOSED CUP, DEG F: 82

HAZARD CLASS: RED-LABEL, FLAMMABLE LIQUID LEL: 1.10

EXTINGUISHING MEDIA: FOAM, CARBON DIOXIDE, DRY CHEMICAL, WATER FOG.

## USUAL FIRE AND EXPLOSION HAZARDS:

IF POLYMERIZATION TAKES PLACE IN A CONTAINER, THERE IS POSSIBILITY OF VIOLENT RUPTURE OF THE CONTAINER. STYRENE VAPORS ARE UNINHIBITED AND MAY FORM POLYMERS IN VENTS OR FLAME ARRESTORS OF STORAGE TANKS RESULTING IN STOPPAGE OF VENTS. VAPORS MAY CAUSE FLASH FIRE. KEEP CONTAINERS TIGHTLY CLOSED AND ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND FLAME. NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

## SPECIAL FIRE FIGHTING PROCEDURES:

FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO-IGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT

## MATERIAL SAFETY DATA SHEET

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE

## SECTION VI - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: MAY OCCUR.

## CONDITIONS TO AVOID:

ELEVATED TEMPERATURES. IMPROPER ADDITION OF PROMOTER AND/OR CATALYST. AVOID DIRECT CONTACT OF MEKP CATALYST WITH ACCELERATOR. IF AN ACCELERATOR SUCH AS COBALT DRIER IS TO BE ADDED, MIX THIS ACCELERATOR WITH BASE MATERIAL BEFORE ADDING CATALYST.

## INCOMPATIBILITY (MATERIALS TO AVOID):

OXIDIZERS, PEROXIDES, STRONG ACIDS, ALUMINUM CHLORIDE AND VINYL POLYMERS.

## HAZARDOUS DECOMPOSITION PRODUCTS:

THERMAL DECOMPOSITION OR COMBUSTION CAN PRODUCE FUMES CONTAINING ORGANIC ACIDS, CARBON DIOXIDE AND CARBON MONOXIDE.

## SECTION VII - SPILL OR LEAK PROCEDURES

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

REMOVE ALL SOURCES OF IGNITION (FLAMES, HOT SURFACES, AND ELECTRICAL, STATIC, OR FRICTIONAL SPARKS). AVOID BREATHING VAPORS. VENTILATE AREA. CONTAIN AND REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS.

## WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS. INCINERATE IN APPROVED FACILITY.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

## RESPIRATORY PROTECTION:

DO NOT BREATHE OR INGEST VAPORS, SPRAY MIST OR DUST WHILE APPLYING, SANDING, GRINDING, OR SAWING CURED PRODUCT. WEAR AN APPROPRIATE, (NIOSH/MSHA APPROVED) PROPERLY FITTED RESPIRATOR DURING APPLICATION AND OTHER USE OF THIS PRODUCT UNTIL ALL VAPORS, MISTS, AND DUSTS ARE EXHAUSTED, UNLESS AIR MONITORING DEMONSTRATES VAPOR AND MIST AND DUST LEVELS ARE BELOW APPLICABLE LIMITS. FOLLOW RESPIRATOR MANUFACTURER'S DIRECTIONS FOR RESPIRATOR USE. OBSERVE OSHA STANDARD 29CFR 1910.134.

## VENTILATION:

PROVIDE GENERAL CLEAN AIR DILUTION OR LOCAL EXHAUST VENTILATION IN VOLUME AND PATTERN TO KEEP THE AIR CONTAMINANT CONCENTRATION BELOW THE LOWER EXPLOSION LIMIT AND BELOW CURRENT APPLICABLE EXPOSURE LIMITS IN THE MIXING, APPLICATION AND CURING AREAS; AND TO REMOVE DECOMPOSITION PRODUCT DURING WELDING AND FLAME CUTTING ON SURFACES COATED WITH THIS PRODUCT. IN CONFINED AREAS, USE ONLY WITH FORCED VENTILATION ADEQUATE TO KEEP VAPOR CONCENTRATION BELOW 20% OF LOWER EXPLOSION LIMITS. REFER TO OSHA STANDARDS 29CFR 1910.94, 1910.107, 1910.108.

NOTE: HEAVY SOLVENT VAPORS SHOULD BE REMOVED FROM LOWER LEVELS OF THE WORK AREA AND ALL IGNITION SOURCES (NONEXPLOSION-PROOF MOTORS, ETC.) SHOULD BE ELIMINATED.

PROTECTIVE GLOVES: USE SOLVENT IMPERMEABLE GLOVES TO AVOID CONTACT WITH PRODUCT

## EYE PROTECTION:

DO NOT GET IN EYES. USE SAFETY EYEWEAR WITH SPLASH GUARDS OR SIDE SHIELDS, CHEMICAL GOGGLES, FACE SHIELDS.

## OTHER PROTECTIVE EQUIPMENT:

AVOID CONTACT WITH SKIN. USE PROTECTIVE CLOTHING. PREVENT CONTACT WITH CONTAMINATED CLOTHING. WASH CONTAMINATED CLOTHING, INCLUDING SHOES, BEFORE REUSE.

## SECTION IX - SPECIAL PRECAUTIONS

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

DO NOT STORE ABOVE 120 DEG. F. STORE LARGE QUANTITIES IN BUILDINGS DESIGNED

## MATERIAL SAFETY DATA SHEET

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PRODUCT CODE IDENTITY: 944W969 300      PRODUCT NAME: SEA RAY WHITE

---

TO COMPLY WITH OSHA 1910.106. KEEP AWAY FROM HEAT, SPARKS AND FLAME. KEEP CONTAINERS CLOSED WHEN NOT IN USE AND UPRIGHT TO PREVENT LEAKAGE.

## OTHER PRECAUTIONS:

CONTAINERS SHOULD BE GROUNDED WHEN POURING. DO NOT TAKE INTERNALLY. WASH HANDS AFTER USING AND BEFORE SMOKING OR EATING. EMPTIED CONTAINERS MAY RETAIN HAZARDOUS RESIDUE AND EXPLOSIVE VAPORS. KEEP AWAY FROM HEAT, SPARKS AND FLAMES. DO NOT CUT, PUNCTURE OR WELD ON OR NEAR EMPTIED CONTAINERS. FOLLOW ALL HAZARD PRECAUTIONS GIVEN IN THIS DATA SHEET UNTIL CONTAINER IS THOROUGHLY CLEANED OR DESTROYED. IF THIS PRODUCT IS BLENDED WITH OTHER COMPONENTS SUCH AS THINNERS, CONVERTER, COLORANTS AND CATALYSTS PRIOR TO USE, READ ALL WARNING LABELS. ANY MIXTURE OF COMPONENTS WILL HAVE HAZARDS OF ALL COMPONENTS. FOLLOW ALL PRECAUTIONS. IF SPRAYING THIS MATERIAL, KEEP SPRAY BOOTHS CLEAN. AVOID BUILDUP OF SPRAY DUST OR OVERSPRAY IN BOOTHS OR DUCTS.

KEEP OUT OF REACH OF CHILDREN

FOR INDUSTRIAL USE ONLY

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DISCLAIMER AND LIMITATION OF LIABILITY

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TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS ACCURATE. TO THE EXTENT ALLOWED BY LAW, THIS STATEMENT IS MADE IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND IS IN LIEU OF ANY OTHER OBLIGATIONS OR LIABILITY ON THE PART OF COOK PAINT AND VARNISH COMPANY.

COOK PAINT AND VARNISH COMPANY WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. FINAL DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR THE USE CONTEMPLATED, THE MANNER OF USE, AND WHETHER THE SUGGESTED USE INFRINGES ANY PATENT IS THE SOLE RESPONSIBILITY OF THE BUYER.

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72-62-7820-01

Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333

MAR 08 1988



MATERIAL SAFETY DATA SHEET

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

003980

ACETONE

Page: 1

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

Product Name: ACETONE
CAS NUMBER: 67-64-1

05 50 093 7988090-

Data Sheet No: 0004335-004
Prepared: 12/22/88
Supersedes: 03/04/86

SEA-RAY BOATS INC
100 SEA RAY DR
MERRITT ISLAND FL 32952

PRODUCT: 3010000
INVOICE: 120472
INVOICE DATE: 02/21/89
TO: SEA-RAY BOATS INC
100 SEA RAY DR
MERRITT ISLAND FL 32952

ATTN: PLANT MGR./SAFETY DIR.

SECTION II - PRODUCT IDENTIFICATION

General or Generic ID: KETONE

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

SECTION III - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION. SEE DEFINITION PAGE FOR CLARIFICATION

Table with 5 columns: INGREDIENT, % (by WT), PEL, TLV, Note. Row 1: ACETONE, CAS #: 67-64-1, 100, 1000 PPM, 750 PPM, (1)

Notes:

(1) ACGIH - SHORT TERM EXPOSURE LIMIT (STEL) FOR ACETONE IS 1000 PPM. NIOSH RECOMMENDS A LIMIT OF 250 PPM, 8-HOUR TWA.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION IV - PHYSICAL DATA

Table with 2 columns: Property, Value. Rows include Boiling Point, Vapor Pressure, Specific Vapor Density, Specific Gravity, Percent Volatiles, Evaporation Rate.

SECTION V - FIRE AND EXPLOSION INFORMATION

FLASH POINT(TCC ) 0.0 Deg F ( -17.8 Deg C)
EXPLOSIVE LIMIT (PRODUCT) LOWER - 2.6% UPPER - 12.8%

EXTINGUISHING MEDIA: ALCOHOL FOAM 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 POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: MATERIAL IS HIGHLY VOLATILE AND READILY GIVES OFF VAPORS WHICH MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NFPA CODES: HEALTH- 1 FLAMMABILITY- 3 REACTIVITY- 0

SECTION VI - ALL THE HAZARDOUS DATA

PERMISSIBLE EXPOSURE LEVEL 1000 PPM
THRESHOLD LIMIT VALUE 750 PPM
SEE SECTION II


**MATERIAL SAFETY  
DATA SHEET**

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003980

ACETONE

Page: 2

**SECTION VI - HEALTH HAZARD DATA (continued)**
**EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT**

EYES - CAUSES IRRITATION, REDNESS, TEARING.  
 SKIN - CAN CAUSE SLIGHT IRRITATION.  
 BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE UNCONSCIOUSNESS, AND EVEN DEATH.  
 SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

**FIRST AID:**

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDRY 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: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

**PRIMARY ROUTE(S) OF ENTRY:**

INHALATION, SKIN CONTACT

**EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT**

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: KIDNEY DAMAGE, EYE DAMAGE

**SECTION VII - REACTIVITY DATA**

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG OXIDIZING AGENTS., STRONG ALKALIES., STRONG MINERAL ACIDS.

**SECTION VIII - 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 IX - 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: NATURAL RUBBER, NEOPRENE, NITRILE RUBBER

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 X - 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.



72-62-7820-01

**MATERIAL SAFETY  
DATA SHEET**

**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 health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

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-Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072



IDENTITY (As Used on Label and List) Seabond 1010	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.
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**Section I**

Manufacturer's Name Midwest General Corp.	Emergency Telephone Number (313) 881-2340
Address (Number, Street, City, State, and ZIP Code) 20630 Harper Avenue	Telephone Number for Information (313) 881-2340
Harper Woods, Michigan 48225	Date Prepared October 13, 1987
Signature of Preparer (optional)	

**Section II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
1,1,1, TRI Chloroethane ( Methyl Chloroform)	350ppm	350ppm		68%
Toluol (Toluene)	200ppm	100ppm		8%

**Section III — Physical/Chemical Characteristics**

Boiling Point	165 °f	Specific Gravity (H <sub>2</sub> O = 1)	1.26
Vapor Pressure (mm Hg.)	104	Melting Point	NA
Vapor Density (AIR = 1)	4,54	Evaporation Rate (Butyl Acetate = 1)	2.6
Solubility in Water	Nil		

Appearance and Odor  
 Brown syrupy Liquid - Degreasing Fluid Odor

**Section IV — Fire and Explosion Hazard Data**

Flash Point (Method Used) NONE	Flammable Limits N/A	LEL 7%	UEL 15%
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Extinguishing Media  
 Water, Dry Chemical or Carbon Dioxide

Special Fire Fighting Procedures  
 Fire Fighters should wear NIOSH/MSHA approved Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards  
 Vapor Concentrated in a confined and poorly ventelated area  
 can be ignited upon contact with a spark.

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or Byproducts Above 1300°f possibly hydrogen chloride & Co.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

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

Health Hazards (Acute and Chronic) Excessive inhalation causes headaches, dizziness and nausea. Anesthesia in very high concentrations can cause irritation to nose, throat, eyes, and skin.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure May cause nausea and drowsiness and produce a mild reddening of the skin.

Medical Conditions Generally Aggravated by Exposure Dermatitis and Respiratory conditions

Emergency and First Aid Procedures Swallowing - drink a quart of water; Skin - flush with water; Ingestion - remove to fresh air.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled Evacuate area and provide maximum ventilation. Recover spilled material with saw dust and sweep into closed container.

Waste Disposal Method Contaminated material must be disposed of in a permitted hazardous waste management facility.

Precautions to Be Taken in Handling and Storing Do Not use in a poorly ventilated area.

Keep container closed when not in use. Label containers.

Other Precautions Avoid prolonged breathing of vapors. Use with ventilation.

Section VIII — Control Measures

Respiratory Protection (Specify Type) Cartridge respirator or gas mask

Ventilation	Local Exhaust	Sufficient to keep Work area conc below TLV	Special
	Mechanical (General)		Other

Protective Gloves Impermeable Nitrile Eye Protection Mono Goggles

Other Protective Clothing or Equipment Chemical Apron, Eye bath, Safety shower

Work/Hygienic Practices Use with adequate ventilation, avoid prolonged contact.

MATERIAL SAFETY DATA SHEET

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-Mandatory Form) Form Approved OMB No. 1218-0072



IDENTITY (As Used on Label and List)  
DYKEM STEEL BLUE DX-100

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.

Section I

Manufacturer's Name DYKEM COMPANY	Emergency Telephone Number (314)423-0100
Address (Number, Street, City, State, and ZIP Code) 8501 Delport Drive	Telephone Number for Information (314)423-0100
St. Louis, Missouri 63114	Date Prepared OCT 17 1985
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Methyl Violet (CAS # 8004-87-3)	*N/A	*N/A	None	1-3
N-Butyl Acetate (CAS # 123-86-4)	150 PPM	150 PPM	None	30-40
Denatured Ethyl Alcohol (CAS # 64-17-5)	1000 PPM	1000 PPM	None	50-60
N-Butyl Alcohol (CAS # 71-36-3)	100 PPM	100 PPM	None	3-6
Cellulose Resin (CAS # 9004-67-63.0)	*N/A	*N/A	None	3-6

Section III — Physical/Chemical Characteristics

Boiling Point	160 <sup>o</sup> F	Specific Gravity (H <sub>2</sub> O = 1)	.86
Vapor Pressure (mm Hg.)	36	Melting Point	Liquid
Vapor Density (AIR = 1)	> 1	Evaporation Rate (Butyl Acetate = 1)	> 1
Solubility in Water	Appreciable		
Appearance and Odor	Intense blue color, sweet solvent odor.		

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	61 <sup>o</sup> F TOC	Flammable Limits	LEL 1.4	UEL 11.2
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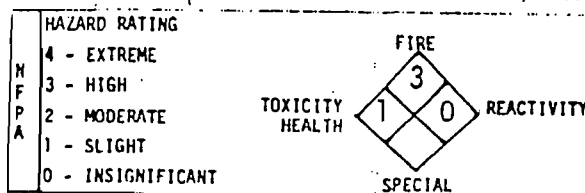
Extinguishing Media  
Carbon Dioxide, Foam, Dry Chemical

Special Fire Fighting Procedures  
Wear self-contained breathing apparatus in enclosed areas. Water may be used to cool fire-exposed containers.

Unusual Fire and Explosion Hazards  
Vapors are heavier than air and may travel along ground, or may be moved by ventilation and ignited by spark, flame and other ignition sources.

(Reproduce locally) \*N/A = Not Applicable  
PROPER SHIPPING NAME: (D.O.T.) PAINT  
HAZARD CLASS: (D.O.T.) FLAMMABLE LIQUID  
I. D. NUMBER: UN-1263

OSHA 174, Sept. 1985



E3021  
E3022

**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.

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**IDENTITY (As Used on Label and List)**  
FILLER 7 WHITE

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**Section I**

<b>Manufacturer's Name</b> AKEMI PLASTICS, INCORPORATED	<b>Emergency Telephone Number</b> (517) 663-8191
<b>Address (Number, Street, City, State, and ZIP Code)</b> 5265 S. CLINTON TRAIL EATON RAPIDS, MICHIGAN 48827	<b>Telephone Number for Information</b> (517) 663-8191
	<b>Date Prepared</b> 8/31/88
	<b>Signature of Preparer (optional)</b>

**Section II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
MIXTURE UNSATURATED POLYESTER RESIN	N/A	N/A	N/A	25-30
25013-15-4 VINYL TOLUENE	100 PPM	50 PPM	100 PPM-STEL	10-15
123-31-9 HYDROQUINONE	2 MG/M <sup>3</sup>	2 MG/M <sup>3</sup>	N/A	0-1
91-99-6 ANILINE DERIVATIVE	N/A	N/A	N/A	0-1
MIXTURE DENATURED ALCOHOL	N/A	50 PPM	N/A	0-1
1317-70-0 TITANIUM DIOXIDE	10 MG/M <sup>3</sup>	10 MG/M <sup>3</sup>	15 MG/M <sup>3</sup> -TWA	1-5
7727-43-7 BARIUM SULFATE	15 MG/M <sup>3</sup>	10 MG/M <sup>3</sup>	N/A	1-5
14807-96-6 MAGNESIUM SILICATE	6 MG/M <sup>3</sup>	6 MG/M <sup>3</sup>	N/A	40-50
7631-86-9 FUMED SILICA	20 MPPCF	10 MG/M <sup>3</sup>	N/A	0-1
77-92-9 CITRIC ACID	N/A	N/A	N/A	0-1

**Section III — Physical/Chemical Characteristics**

<b>Boiling Point</b> N/A	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> 1.76
<b>Vapor Pressure (mm Hg.)</b> N/A	<b>Melting Point</b> N/A
<b>Vapor Density (AIR = 1)</b> N/A	<b>Evaporation Rate (Butyl Acetate = 1)</b> N/A

**Solubility in Water**  
SLIGHT

**Appearance and Odor**  
WHITE PASTE WITH TYPICAL VINYL TOLUENE ODOR

**Section IV — Fire and Explosion Hazard Data**

<b>Flash Point (Method Used)</b> 110°F SFCC	<b>Flammable Limits</b>	<b>LEL</b> N/A	<b>UEL</b> N/A
<b>Extinguishing Media</b> WATER FOG, DRY CHEMICAL, FOAM, CARBON DIOXIDE			
<b>Special Fire Fighting Procedures</b> NONE			

**Unusual Fire and Explosion Hazards**

VINYL TOLUENE POLYMERIZES READILY AT ELEVATED TEMPERATURES OF FIRE CONDITIONS. CLOSED

**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**

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**IDENTITY (As Used on Label and List)**  
 FILLER 7

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**Section I**

Manufacturer's Name AKEMI PLASTICS, INC.	Emergency Telephone Number: (517) 663-8191
Address (Number, Street, City, State, and ZIP Code): 5265 S. CLINTON TRAIL	Telephone Number for Information (517) 663-8191
EATON RAPIDS, MI 48827	Date Prepared 6/4/86
	Signature of Preparer (optional):

**Section II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
UNSATURATED POLYESTER IN VINYL TOLUENE 41377-04-2	100 PPM	N/A	N/A	> 50
HYDROQUINONE 123-31-9	2 MG/M <sup>3</sup>	2 MG/M <sup>3</sup>	N/A	1
DENATURED ALCOHOL	N/A	50 MG/M <sup>3</sup>	N/A	3
ANILINE DERIVATIVE 91-99-6	N/A	N/A	N/A	1
TITANIUM DIOXIDE 13463-67-7	N/A	10 MG/M <sup>3</sup>	TWA 15 MG/M <sup>3</sup>	2
METAL OXIDE 1317-61-9	15 MG/M <sup>3</sup>	10 MG/M <sup>3</sup>	N/A	0.2
ALKALINE EARTH SULFATE 7727-43-7	15 MG/M <sup>3</sup>	10 MG/M <sup>3</sup>	N/A	< 10
HYDROUS MAGNESIUM SILICATE 14807-96-6	2 MG/M <sup>3</sup>	N/A	N/A	> 45

**Section III — Physical/Chemical Characteristics**

Boiling Point:	330 <sup>o</sup> F	Specific Gravity (H <sub>2</sub> O = 1):	1.74
Vapor Pressure (mm Hg):	N/A	Melting Point:	N/A
Vapor Density (AIR = 1):	1	Evaporation Rate (Butyl Acetate = 1):	> 1
Solubility in Water: SLIGHT			
Appearance and Odor: WHITE, GRAY, BLACK PASTE			

**Section IV — Fire and Explosion Hazard Data**

Flash Point (Method Used): 100 <sup>o</sup> F PMCC	Flammable Limits	LEL 0.8	UEL 11
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Extinguishing Media  
 ALCOHOL FOAM, DRY CHEMICAL, CARBON DIOXIDE AND WATER FOG.

Special Fire Fighting Procedures  
 SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE EQUIPMENT SHOULD BE USED.

**Unusual Fire and Explosion Hazards**

CLOSED CONTAINERS COULD RUPTURE VIOLENTLY WHEN EXPOSED TO HEAT OR FLAME.

*To Beille - Linder*

Mooney Chemicals, Inc.  
2301 Scranton Road  
Cleveland, Ohio 44113  
(216) 781-8383

Date: July 15, 1985  
Tradename: 12Z COBALT CEM-ALL  
MFG. Code: 109  
Product Class: Paint Drier  
MPCA HMIS: H1F2R0

HAZARDOUS INGREDIENTS

Component	CAS #	Z +5	TLV
Cobalt Carboxylate	Mixture	70	0.1 mg/m <sup>3</sup> as Cobalt (1)
Mineral Spirits	8032-32-4	30	350 mg/m <sup>3</sup> (2)

- (1) OSHA Table Z-1 regulates "Cobalt metal fume and dust"  
(2) NIOSH Criteria Document, "Refined Petroleum Solvent," 1977.  
ACGIH-TLV/TWA, 525 mg/m<sup>3</sup>; TLV/STEL, 1050 mg/m<sup>3</sup> as Stoddard Solvent.

PHYSICAL DATA

Boiling Range: 302 - 399° F.  
Vapor Density  Heavier \_\_\_ Lighter  
Evaporation Rate: \_\_\_ Faster  Slower than Ether  
Percentage Volatile by Volume: 30%  
Weight per Gallon: 8.3 LBS

FIRE AND EXPLOSION DATA

FLASH POINT: 104° F.

Classifications: OSHA: Combustible Liquid - Class II  
DOT Shipping Name: Driers, Paint or Varnish Liquid, W.O.S.  
DOT Hazard Class: Combustible Liquid, UN 1168

EXTINGUISHING MEDIA

FOAM  "ALCOHOL FOAM"  CO<sub>2</sub>  DRY CHEMICAL  WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, other flames and ignition sources at locations distant from material handling point.

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

SPECIAL FIRE FIGHTING PROCEDURES

Self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode.

The facts stated are based upon information believed to be accurate. No guarantee is made of data accuracy and MOONEY CHEMICALS INC. ASSUMES NO LIABILITY. NO WARRANTIES OF MERCHANTABILITY, FITNESS OR OTHERWISE ARE CREATED. MOONEY SHALL NOT BE LIABLE FOR SPECIAL INCIDENTAL AND CONSEQUENTIAL DAMAGES.

**MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS**

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-5363789

SIGNATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: 02, 06, 10, 11, 12, 13, PRODUCT NAME: Sea Hawk Urethane Tints  
16, 21, 25, 26, 35, 42, 53, 55, 58, 59, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 73, 74, 75,  
PRODUCT CLASS: 81, 82, 83  
ACRYLIC

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUOL	108-88-3	< 20	100		36.7mm@30°C
METHYL ETHYL KETONE	64742-95-6	< 10	200		71.2mm@20°C
XYLOL	1330-20-7	< 20	100		10.0mm@28°C
NYL ACETATE	141-78-6	< 7	400		86.0mm@20°C
PM ACETATE	108-65-6	< 15	NE		3.7mm@20°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 75.150°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 52-60% VOLATILE WT. WT/GAL 8.2-9.0

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 22°F T.O.C. 1.1

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.



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SIGNATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: 04 PRODUCT NAME: SEA HAWK URETHANE TINTS (LT. CHIFFON YELLOW)  
PRODUCT CLASS: ACRYLIC

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT (Less Than)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUOL	108-88-3	<15	100		36.7mm@30°C
METHYL ETHYL	64742-95-6	<10	200		71.2mm@20°C
XYLOL	1330-20-7	<20	100		10.0mm@28°C
ETHYL ACETATE	141-78-6	<10	400		86.0mm@20°C
PM ACETATE	108-65-6	<15	NE		3.7mm@20°C
LEAD CHROMATE	1334-37-2	24	14.9% LEAD	.05mg/m <sup>3</sup>	8 hr. TWA (C)
			4.9% CRO <sub>3</sub>	.10mg/m <sup>3</sup>	8 hr. TWA (C)

\*\*\*Lead Chromate is a suspected human carcinogen (lungs & respiratory tract) because of the lead & chromate content.

**SECTION III – PHYSICAL DATA**

BOILING RANGE 75-150°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 46 % VOLATILE WT. WT/GAL 10.09

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT \_\_\_\_\_ LEL \_\_\_\_\_  
DOT \_\_\_\_\_ 22°F T.O.C. 1.1

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO<sub>2</sub>  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

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EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: 

INFORMATION TELEPHONE NO. 813-536-3789

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NUMBER: 34

PRODUCT NAME: SEA HAWK URETHANE TINT (MED. CHROME YELLOW)

PRODUCT CLASS: ACRYLIC

**SECTION II - HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT (LESS THAN)	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
DIOL	108-88-3	< 15	100		36.7mm@30°C
ETHYL ETHYL KETONE	64742-95-6	< 10	200		71.2mm@20°C
DIOL	1330-20-7	< 20	100		10.0mm@28°C
ETHYL ACETATE	141-78-6	< 10	400		86.0mm@20°C
ACETATE	108-65-6	< 15	NE		3.7mm@20°C
LEAD CHROMATE	1344-37-2	< 28	15.9% - .05mg/m <sup>3</sup> 8 hr. TWA (OSHA) 7.4% CR <sub>3</sub> - .10mg/m <sup>3</sup> 8 hr. TWA (OSHA)		

\*\*\*Lead Chromate is suspected human carcinogen (lungs & respiratory tract) because of the lead & chromate content.

**SECTION III - PHYSICAL DATA**

BOILING RANGE 75-150°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 44 % VOLATILE WT. WT/GAL 10.47

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

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 22°F T.O.C. 1.1

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO<sub>2</sub>  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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BEST AVAILABLE COPY

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DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 24, 54, 71, 72 PRODUCT NAME: SEA HAWK URETHANE TINTS

PRODUCT CLASS: ACRYLIC

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUOL	108-88-3	<10	100		36.7mm@30°C
METHYL ETHYL KETONE	78-93-3	<7	200		71.2mm@20°C
ETHYL ACETATE	141-78-6	<5	400		86.0mm@20°C
PM ACETATE	108-65-6	<10	NE		3.7mm@20°C
XYLOL	1330-20-7	<15	100		10.0mm@28°C

SECTION III - PHYSICAL DATA

BOILING RANGE 75-150° VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 41 % VOLATILE WT. WT/GAL 10.2-10

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 22°F T.O.C. 1.1.

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

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SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: 76, 77, 78      PRODUCT NAME: SEA HAWK URETHANE TINTS  
PRODUCT CLASS: ACRYLIC RESIN

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUENE	108-88-3	< 30	100		36.7mm@30°C
METHYL ETHYL KETONE	64742-95-6	< 25	200		71.2mm@20°C
XYLENE	1330-20-7	< 20	100		10.0mm@28°C
PM ACETATE	108-65-6	< 5	NE		3.7mm@20°C
HYL ACETATE	141-78-6	< 5	400		86.0mm@20°C
CHROMIUM HYDROXIDE AS CR					.25% CR - .5mg/CM <sup>3</sup> 8 hr. TWA (OSHA)

**SECTION III – PHYSICAL DATA**

BOILING RANGE 75-150°C      VAPOR DENSITY  HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE  FASTER       SLOWER THAN ETHER 52/60% VOLATILE WT.      WT/GAL 8.0

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION <sup>1B</sup>      OSHA \_\_\_\_\_      FLASH POINT \_\_\_\_\_      LEL \_\_\_\_\_  
DOT \_\_\_\_\_      22°F TOC      1.1

EXTINGUISHING MEDIA:

- FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. - WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

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DATE OF PREPARATION: 1/4/88      EMERGENCY TELEPHONE NO.: 813-536-3789  
SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-67      PRODUCT NAME: CLEAN UP URETHANE THINNER  
PRODUCT CLASS:

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUENE	108-88-3	< 70	100		36.7mm@30°C
ISOPROPYL ALCOHOL	67-63-0	< 8	400	400	33mm@20°C
METHYL ETHYL KETONE	78-93-3	< 10	200		71.2mm@20°C
BUTYL CELLOSOLVE	111-76-2	< 50	NE		.6mm@20°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER      % VOLATILE WT. 100 WT/GAL 7.04

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT      LEL  
DOT \_\_\_\_\_      22°F T.C.C.      1.2%

EXTINGUISHING MEDIA:

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-69      PRODUCT NAME: FAST URETHANE THINNER  
PRODUCT CLASS:

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
ETHYL ACETATE	141-78-6	< 25	400		76mm@20°C
METHYL ETHYL KETONE	78-93-3	< 25	200		71.2mm@20°C
TOLUOL	108-88-3	< 25	100		36.7mm@30°C
METHYL ISOBUTYL KETONE	108-10-1	< 25	100		15mm@20°C
ISOBUTYL ACETATE	110-19-0	NE	150		12.5mm@20°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER      % VOLATILE WT. 100WT/GAL 7.04

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT \_\_\_\_\_      LEL \_\_\_\_\_  
DOT \_\_\_\_\_      22°F T.O.C.      1.1

EXTINGUISHING MEDIA:

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER:  INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-70 PRODUCT NAME: MEDIUM URETHANE THINNER

PRODUCT CLASS:

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
METHYL ETHYL KETONE	78-93-3	< 20	200		71.20mm@20°C
ISOBUTYL ACETATE	110-19-0	< 30	150		12.5mm@20°C
METHYL ISOBUTYL KETONE	108-10-1	< 30	100		16.0mm@20°C
XILOL	1330-20-7	< 30	100		10.0mm@28°C
METHYL AMYL KETONE	110-43-0	< 20	100		2.6mm@20°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 78-178°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
 EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT. 100 WT/GAL 6.91

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT 22°F T.O.C. LEL 1.1  
 DOT \_\_\_\_\_

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

**MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS**

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88. EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER:  INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-71 PRODUCT NAME: SEA HAWK STANDARD URETHANE THINNER

PRODUCT CLASS: SOLVENT BLEND

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
METHYL ETHYL KETONE	78-93-3	<18	200		71.2mm@20°C
TOLUOL	108-88-3	<18	100		36.7mm@30°C
METHYL ISOBUTYL KETONE	108-10-1	<40	100		15.0mm@20°C
METHYL AMYL KETONE	110-43-0	<18	100		2.14mm@20°C
1 ACETATE	108-65-6	<12	NE		3.7mm@20°C
EEP SOLVENT	763-69-9	<10	NE		1.11mm@25°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 78-170°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT. WT/GAL 6.98

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 22°F T.O.C. 1.05

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-72      PRODUCT NAME: SLOW URETHANE THINNER  
PRODUCT CLASS:

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
METHYL ETHYL KETONE	78-93-3	< 10	200		71.2mm@20°C
TOLUOL	108-88-3	< 10	100		36.7mm@30°C
METHYL ISOBUTYL KETONE	108-10-1	< 10	100		15.0mm@20°C
XYLOL	1330-20-7	< 20	100		10.0mm@20°C
METHYL AMYL KETONE	110-43-9	< 20	100		2.14mm@20°C
ETHYL 3-ETHOXYPROPIONATE	763-69-9-	< 25	NE		1.11mm@25°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 78-170°C      VAPOR DENSITY  HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE  FASTER       SLOWER THAN ETHER      % VOLATILE WT.100 WT/GAL 7.21

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT \_\_\_\_\_      LEL \_\_\_\_\_  
DOT \_\_\_\_\_      22°F T.O.C.      1.1

EXTINGUISHING MEDIA:

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER:       INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-74 #2      PRODUCT NAME: SEA HAWK URETHANE ACCELERATOR  
PRODUCT CLASS: ZINC COMPOUND IN SOLVENT

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUOL	108-88-3	100	100		36.7mm@30°C
PM ACETATE	108-65-6	100	NE		3.7mm@20°C
MINERAL SPIRITS	64742-88-7	100	100	500	.3mm@100°F

**SECTION III – PHYSICAL DATA**

BOILING RANGE 108-207°C      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER      85 % VOLATILE WT.      WT/GAL 7.49

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT      LEL  
DOT \_\_\_\_\_      40°F T.C.C.      1.0

**EXTINGUISHING MEDIA:**

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

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**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-75 PRODUCT NAME: ALUM. CHROME

PRODUCT CLASS: VINYL

**SECTION II - HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT < less than	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
ZINC CHROMATE DISPERSION		< 20			
ZINC CHROMATE			.05mg/m <sup>3</sup> TWA-8 hr. as C THIS MATERIAL IS A SUSPECTED HUMAN CARCINOGEN ( LUNGS AND RESPIRATORY TRACT) BECAUSE OF THE CHROMATE CONTENT.		
METHYL ETHYL KETONE	78-93-3	< 11	200		71.2mmHg 20°C
ISOP. ALCOHOL	67-63-0	< 11	400		33mmHg 20°C
ISOP. ACCOHOL	67-63-0	< 60	400		33mmHg 20°C
TOLUENE	108-88-3	< 20	100		36.7mmHg 30°C

**SECTION III - PHYSICAL DATA**

BOILING RANGE 78-111°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 84 % VOLATILE WT. WT/GAL 7.2-7.40

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

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 40°F T.C.C. 1.2%

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-75C      PRODUCT NAME: ALUM CHROME PRIMER CATALYST  
PRODUCT CLASS: PAINT RELATED PRODUCT

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
ISOPROPYL ALCOHOL	67-63-0	<41	400		33mm@20°C
BUTYL CELLOSOLVE	111-76-2	<21	25		.6mm@20°C
BUTYL ALCOHOL	71-36-3	<29	150		4mm@20°C
PHOSPHORIC ACID	7664-38-2	<3.30	CORROSIVE		
TOLUENE	108-88-3	<11	100		36.7mm@30°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 80.8-172°C      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER 92 % VOLATILE WT.      WT/GAL      7.11

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION      1B      OSHA \_\_\_\_\_      FLASH POINT      LEL  
DOT \_\_\_\_\_      40°F T.C.C.      1.2%

EXTINGUISHING MEDIA:

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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U.S. DEPARTMENT OF LABOR  
Occupational Safety and Health Administration

Form Approved  
OMB No. 44-R1387

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

MANUFACTURER'S NAME <b>Nautical Coatings, Inc.</b>		EMERGENCY TELEPHONE NO. <b>813-536-3789</b>
ADDRESS (Number, Street, City, State, and ZIP Code) <b>P.O. BOX 310305, Tampa, Florida 33680</b>		
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS <b>S 76 Fiberplate Primer</b>	
CHEMICAL FAMILY	FORMULA	

## SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS SEE BELOW	35.3		FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
METHYL ISOBUTYL KETONE					100
TOLUENE					100
XYLENE					100

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H <sub>2</sub> O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (H <sub>2</sub> O=1)	
SOLUBILITY IN WATER			
APPEARANCE AND ODOR			

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) <b>40°F T.C.C.</b>	FLAMMABLE LIMITS	Lel	Uel
		13	7.03
EXTINGUISHING MEDIA <b>USE DRY CHEMICAL OR CARBON DIOXIDE FOR SMALL FIRES-ALCOHOL TYPE FOAM FOR LARGE FIRES</b>			
SPECIAL FIRE FIGHTING PROCEDURES			
KEEP CLOSED CONTAINERS COOL WITH WATER FOG.			
UNUSUAL FIRE AND EXPLOSION HAZARDS			
AVOID OPEN SPARKS, HEAT OR FLAME.			

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

MANUFACTURER'S NAME Nautical Coatings, Inc.		EMERGENCY TELEPHONE NO. 813-536-3789
ADDRESS (Number, Street, City, State, and ZIP Code) P.O. Box 310305, Tampa, Florida 33680		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS S-76c Fiberplastic Catalyst
CHEMICAL FAMILY	FORMULA Epoxy primer catalyst	

## SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS see below	79.5		FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Xylene					100
Isopropyl Alcohol					400
Toluol					100

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H <sub>2</sub> O=1)	
VAPOR PRESSURE (mm Hg.)	36.7mm@30°C	PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ = 1)	
SOLUBILITY IN WATER			
APPEARANCE AND ODOR			

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	40% F T.C.C.	FLAMMABLE LIMITS	1.1% <sup>UEL</sup>	12.0% <sup>UEL</sup>
EXTINGUISHING MEDIA Use dry chemical or carbon dioxide for small fires-Alcohol for large.				
SPECIAL FIRE FIGHTING PROCEDURES				
Keep closed containers cool with water fog.				
UNUSUAL FIRE AND EXPLOSION HAZARDS				
Avoid open sparks, Heat or flames.				

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DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER:  INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-78 PRODUCT NAME: SEA HAWK HIGH BUILD EPOXY PRIMER  
PRODUCT CLASS: EPOXY

**SECTION II - HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
METHYL ISOBUTYL KETONE	108-10-1	15	100		15mm@20°C
XYLOL	1330-20-7	10	100		10mm@28°C

**SECTION III - PHYSICAL DATA**

BOILING RANGE 114-143°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT. 20% WT/GAL 12.00

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

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT 61°F LEL: 1.1%  
DOT \_\_\_\_\_

**EXTINGUISHING MEDIA:**

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I – PRODUCT IDENTIFICATION**

PRODUCT NUMBER: S-81      PRODUCT NAME: SEA HAWK FLATTENING AGENT  
PRODUCT CLASS:

**SECTION II – HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
TOLUOL	108-88-3	< 55	100		36.7mm@30°C
METHYL ETHYL KETONE	78-93-3	< 15	200		71.2mm@20°C
METHYL AMYL KETONE	110-43-0	< 15	100		2.14mm@20°C
PM ACETATE	108-65-6	< 15	NE		3.7mm@20°C
XLLOL	1330-20-7	< 3	100		10.0mm@28°C

**SECTION III – PHYSICAL DATA**

BOILING RANGE 78-153°C      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER      83 % VOLATILE WT.      WT/GAL 7.77

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT \_\_\_\_\_      LEL \_\_\_\_\_  
DOT \_\_\_\_\_      22°F T.O.C.      1.1

EXTINGUISHING MEDIA:

FOAM       ALCOHOL       CO2       WATER FOG       OTHER

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INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 1200 SERIES PRODUCT NAME: SEA HAWK BIOCOP ANTI-FOULING COATING

PRODUCT CLASS: TIN METHACRYLATE AND CUPROUS OXIDE PAINT.

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
		TLV	PEL	
TRIBUTYLTIN METHACRYLATE POLYMER	17.2		0.1Mg/M3 as SN	
NAPHTHA	17.2		100 ppm	
AROMATIC HYDROCARBON	11.1		100 ppm	10mm@28°C

SECTION III - PHYSICAL DATA

BOILING RANGE VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT 28.3WT/GAL 14.0

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 79°F LEL 1.1  
DOT FLAMMABLE LIQUID

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. - WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789

NATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 2033 PRODUCT NAME: SEA HAWK ANTIFOULANT REDUCER

PRODUCT CLASS: ENAMEL REDUCER

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
100% SOL	1330-20-7	100	100		10mmHg@28°C

SECTION III - PHYSICAL DATA

MELTING RANGE 135-143°C VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER 100% VOLATILE WT. WT/GAL 7.18

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION 1B OSHA \_\_\_\_\_ FLASH POINT LEL  
DOT \_\_\_\_\_ 84°F T.C.C. 1.1

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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**MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS**

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88      EMERGENCY TELEPHONE NO.: 813-536-3789  
SIGNATURE OF PREPARER: *[Signature]*      INFORMATION TELEPHONE NO.: 813-536-3789

**SECTION I - PRODUCT IDENTIFICATION**

PRODUCT NUMBER: 2044      PRODUCT NAME: SEA HAWK EPOXY REDUCER  
PRODUCT CLASS:

**SECTION II - HAZARDOUS INGREDIENTS**

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
ISOBUTYL ACETATE	110-19-0	< 40	150		12.5mm@20°C
DIACETONE ALCOHOL	123-42-2	< 40	50		.81mm@20°C
XYLOL	1330-20-7	< 32	100		10mm@28°C

**SECTION III - PHYSICAL DATA**

BOILING RANGE      VAPOR DENSITY       HEAVIER       LIGHTER THAN AIR  
EVAPORATION RATE       FASTER       SLOWER THAN ETHER      % VOLATILE WT. 100 WT/GAL 7.40

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

FLAMMABILITY CLASSIFICATION 1B      OSHA \_\_\_\_\_      FLASH POINT \_\_\_\_\_      LEL \_\_\_\_\_  
DOT \_\_\_\_\_      64° T.C.C.      1.1%

**EXTINGUISHING MEDIA:**

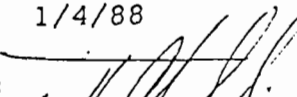
FOAM       ALCOHOL       CO2       WATER FOG       OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789  
SIGNATURE OF PREPARER:  INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 2300 SERIES PRODUCT NAME: SEA HAWK OMP-II ANTI-FOULING COATING  
PRODUCT CLASS: TIN METHACRYLATE PAINT

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
		TLV	PEL	
TRIBUTYLTIN METHACRYLATE POLYMER	19.8		0.1mg/M3 as SN	
TRIBUTYLTIN FLUROIDE	4.6		0.1mg/M3 as SN	
AROMATIC HYDROCARBON	42.9		100 ppm	10mm@28 <sup>0</sup> C

SECTION III - PHYSICAL DATA

BOILING RANGE VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR 10.5  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT. 45 WT/GAL 11.5

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 79<sup>0</sup>F LEL 1.1  
DOT FLAMMABLE LIQUID

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789  
SIGNATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 3400 SERIES PRODUCT NAME: SEA HAWK CUKOTE ANTI-FOULING COATING  
PRODUCT CLASS: CUPROUS OXIDE PAINT

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
		TLV	PEL	
AROMATIC HYDROCARBON	16.2	35		3mm@20°C
XYLENE	6.3	100		10mm@28°C

SECTION III - PHYSICAL DATA

BOILING RANGE VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT. 22.5 WT/GAL 17.8

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 84°F LEL 0.7  
DOT FLAMMABLE LIQUID

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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MATERIAL SAFETY DATA SHEET  
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.  
P.O. BOX 310305  
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 1/4/88 EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: *[Signature]* INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: OMP II 1277 PRODUCT NAME: SEA HAWK ANTI-CORROSIVE PRIMER  
PRODUCT CLASS: CHLORINATED RUBBER BASED PRIMER

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE
			TLV	PEL	
XYLENE		47.7	100 ppm		10mm@28°C

SECTION III - PHYSICAL DATA

BOILING RANGE VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR  
EVAPORATION RATE  FASTER  SLOWER THAN ETHER % VOLATILE WT 47.7 WT/GAL 10.3

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 79°F LEL 1.1  
DOT FLAMMABLE LIQUID

EXTINGUISHING MEDIA:

FOAM  ALCOHOL  CO2  WATER FOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

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# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

MANUFACTURER'S NAME Nautical Coatings, Inc.		EMERGENCY TELEPHONE NO. 813-536-3789
ADDRESS (Number, Street, City, State, and ZIP Code) P.O. Box 310305, Tampa, Florida 33680		
CHEMICAL NAME AND SYNONYMS		TRADE NAME AND SYNONYMS S-77 Medium Build Epoxy Primer
CHEMICAL FAMILY	FORMULA	

## SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS See Below	34		FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)
Methyl Isobutyl Ketone					100
Xylene					100
Toluene					100

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H <sub>2</sub> O=1)	
VAPOR PRESSURE (mm Hg.)	36mm@30°C	PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (----- *1)	
SOLUBILITY IN WATER			
APPEARANCE AND ODOR			

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	40°F T.O.C.	FLAMMABLE LIMITS	1.1%	8%
EXTINGUISHING MEDIA USE DRY CHEMICAL OR CARBON DIOXIDE FOR SMALL FIRES-ALCOHOL TYPE FOAM FOR LARGE FIRES. SPECIAL FIRE FIGHTING PROCEDURES				
KEEP CLOSED CONTAINERS COOL WITH WATER FOG.				
UNUSUAL FIRE AND EXPLOSION HAZARDS				
AVOID OPEN SPARKS, HEAT OR FLAME.				



**MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP**

**SECTION I - PRODUCT INFORMATION**

MANUFACTURER'S NAME: PPG INDUSTRIES INC.	CODE/IDENTITY : DU
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE	TRADE NAME: DURETHANE ENAMEL
PITTSBURGH, PA 15238	CHEMICAL FAMILY: POLYESTER
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE	US-DOT: PAINT, FLAMMABLE LIQUID
AND PRODUCT SAFETY	DATE OF PREPARATION: 11/16/87
(412) 963-5822	CUSTOMER PART #:
EMERGENCY TELEPHONE: (304) 843-1300	

**SECTION II - INGREDIENTS**

	MAXIMUM %WT.	CAS NO.	E X P O S U R E		L I M I T S	
			ACGIH TLV	CSHA PEL	PPG IPEL	
PIGMENTS	10	NOT EST.	NOT EST.	NOT EST.	NOT EST.	NOT EST.
N-BUTYL ACETATE	50	123-85-4	150.00PPM	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	50	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.	NOT EST.

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

BOILING RANGE : 110 - 145 DEG.C	SOLUBILITY IN WATER: 0-1 %
VAPOR PRESSURE: 9-11 mmHg	WT/GAL (LBS): 8-9 (U.S.)
VAPOR DENSITY : HEAVIER THAN AIR	pH: U/1
% VOL./VOLUME : 51-62	% SOLID BY WEIGHT: 45-54
EVAP RATE(BLOAC=100): 109	SPECIFIC GRAVITY: 1.0 - .1

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

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 70 DEG. F PMCC  
FLAMMABLE LIMITS: LEL 1.5 UEL U/1

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS 1B FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

**SECTION V - REACTIVITY DATA**

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:  
Carbon Monoxide,

**SECTION VI - SPILL OR LEAK PROCEDURES**

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

**SECTION VII - HEALTH HAZARD DATA**

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MODERATE SKIN IRRITATION.

INHALATION:

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.  
REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY SYSTEM AND PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.





**MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP**

**SECTION I - PRODUCT INFORMATION**

MANUFACTURER'S NAME: PPG INDUSTRIES INC.	CODE/IDENTITY : DU
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE	TRADE NAME: DURETHANE ENAMEL
PITTSBURGH, PA 15238	CHEMICAL FAMILY: POLYESTER
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE	US-DOT: PAINT, FLAMMABLE LIQUID
AND PRODUCT SAFETY	DATE OF PREPARATION: 11/16/87
(412) 963-5822	CUSTOMER PART #:
EMERGENCY TELEPHONE: (304) 643-1300	

**SECTION II - INGREDIENTS**

	MAXIMUM %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
PIGMENTS	10	NOT EST.	NOT EST.	NOT EST.	NOT EST.
LEAD CHROMATE-LEAD-SULFATE * **	40	1344-37-2	0.05Mg/M3	0.05Mg/M3	0.05Mg/M3
N-BUTYL ACETATE	50	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM
XYLENE	5	1330-20-7	100.00PPM	100.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	50	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

THE FOLLOWING HAZARDOUS MATERIALS ARE COMPONENTS OF ONE OR MORE OF THE ABOVE INGREDIENTS.

LEAD (%NV)	60	7439-92-1	.15Mg/M3	0.05Mg/M3	.15Mg/M3
CHROMIUM COMPOUNDS (INSOLUBLE, % NV) * **	15	18540-29-9	.05Mg/M3	1.00Mg/M3	.05Mg/M3

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY: \* = NTP \*\* = IARC @ = OSHA # = OTHER

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

BOILING RANGE : 110 - 145 DEG.C	SOLUBILITY IN WATER: 0-1 %
VAPOR PRESSURE: 9-11 mmHg	WT/GAL (LBS): 8-13 (U.S.)
VAPOR DENSITY : HEAVIER THAN AIR	pH: U/I
% VOL/VOLUME : 51-62	% SOLID BY WEIGHT: 45-71
EVAP RATE(BUOAc=100): 109	SPECIFIC GRAVITY: 1.0 - 1.6

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

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 70 DEG. F PMCC  
FLAMMABLE LIMITS: LEL 1.5 UEL U/I

**EXTINGUISHING MEDIA:**

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS 1B FLAMMABLE LIQUID FIRES.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

**SPECIAL FIRE FIGHTING PROCEDURES:**

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

**SECTION V - REACTIVITY DATA**

**STABILITY:** STABLE      **HAZARDOUS POLYMERIZATION:** NOT EXPECTED TO OCCUR

**INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):**

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:  
Carbon Monoxide, Lead Oxide, Oxides of Chromium

**SECTION VI - SPILL OR LEAK PROCEDURES**

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

**WASTE DISPOSAL METHOD:**

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**SECTION VII - HEALTH HAZARD DATA**

**EFFECTS OF OVEREXPOSURE FROM:**

**INGESTION:**

HARMFUL OR FATAL IF SWALLOWED.  
DRIED FILM OF THIS PAINT MAY BE HARMFUL IF CHEWED OR SWALLOWED.

**EYE CONTACT:**

CAUSES SEVERE EYE IRRITATION.

**SKIN CONTACT:**

MAY CAUSE MODERATE SKIN IRRITATION.

CONTINUED ON PAGE 2



## MATERIAL SAFETY DATA SHEET COATINGS AND RESINS GROUP

### SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME: PPG INDUSTRIES INC.	CODE/IDENTITY : DU
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE	TRADE NAME: DURETHANE ENAMEL
PITTSBURGH, PA 15238	CHEMICAL FAMILY: POLYESTER
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE	US-DOT: PAINT, FLAMMABLE LIQUID
AND PRODUCT SAFETY	DATE OF PREPARATION: 11/16/87
(412) 963-5822	CUSTOMER PART #:
EMERGENCY TELEPHONE: (304) 843-1300	

### SECTION II - INGREDIENTS

	MAXIMUM %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
PIGMENTS	10	NOT EST.	NOT EST.	NOT EST.	NOT EST.
CADMIUM SULFOSELENIDE * **	30	5839-34-7	0.05Mg/M3	0.20Mg/M3	0.05Mg/M3
N-BUTYL ACETATE	50	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM
XYLENE	1	1330-20-7	100.00PPM	100.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	50	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

THE FOLLOWING HAZARDOUS MATERIALS ARE COMPONENTS OF ONE OR MORE OF THE ABOVE INGREDIENTS.

CADMIUM (% NV) * **	20	7440-43-9	.05Mg/M3	0.20Mg/M3	.05Mg/M3
SELENIUM (% NV)	5	7782-49-2	.20Mg/M3	.20Mg/M3	.20Mg/M3
HEAVY METALS (% NV)	25	NE	NOT EST.	NOT EST.	NOT EST.

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY: \* = NTP \*\* = IARC @ = OSHA # = OTHER

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE : 110 - 145 DEG.C	SOLUBILITY IN WATER: 0-1 %
VAPOR PRESSURE: 9-11 mmHg	WT/GAL (LBS): 8-11 (U.S.)
VAPOR DENSITY : HEAVIER THAN AIR	pH: U/I
% VOL/VOLUME : 51-62	% SOLID BY WEIGHT: 45-65
EVAP RATE(BUOAc=100): 109	SPECIFIC GRAVITY: 1.0 - 1.3

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 70 DEG. F PMCC      FLAMMABLE LIMITS: LEL 1.5    UEL U/I

#### EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

#### SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

### SECTION V - REACTIVITY DATA

STABILITY: STABLE      HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

#### INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

#### HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:  
Carbon Monoxide, Cadmium Oxides

### SECTION VI - SPILL OR LEAK PROCEDURES

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

#### WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

### SECTION VII - HEALTH HAZARD DATA

#### EFFECTS OF OVEREXPOSURE FROM:

##### INGESTION:

HARMFUL OR FATAL IF SWALLOWED.  
DRIED FILM OF THIS PAINT MAY BE HARMFUL IF CHEWED OR SWALLOWED.

##### EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

##### SKIN CONTACT:

CONTINUED ON PAGE 2



**MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP**

**SECTION I - PRODUCT INFORMATION**

MANUFACTURER'S NAME: PPG INDUSTRIES INC.	CODE/IDENTITY : DU
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE	TRADE NAME: DURETHANE ENAMEL
PITTSBURGH, PA 15239	CHEMICAL FAMILY: POLYESTER
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE	US-DOT: PAINT, FLAMMABLE LIQUID
AND PRODUCT SAFETY	DATE OF PREPARATION: 11/16/87
(412) 963-5822	CUSTOMER PART #:
EMERGENCY TELEPHONE: (304) 843-1300	

**SECTION II - INGREDIENTS**

	MAXIMUM		EXPOSURE		LIMITS
	%WT.	CAS NO.	ACGIH TLV	OSHA PEL	PPG IPEL
PIGMENTS	10	NOT EST.	NOT EST.	NOT EST.	NOT EST.
LEAD CHROMATE-LEAD-SULFATE * **	40	1344-37-2	0.05Mg/M3	0.05Mg/M3	0.05Mg/M3
CADMIUM SULFOSELENIDE * **	30	58339-34-7	0.05Mg/M3	0.20Mg/M3	0.05Mg/M3
N-BUTYL ACETATE	50	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM
XYLENE	5	1330-20-7	100.00PPM	100.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	50	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

THE FOLLOWING HAZARDOUS MATERIALS ARE COMPONENTS OF ONE OR MORE OF THE ABOVE INGREDIENTS.

LEAD (%NV)	60	7439-92-1	.15Mg/M3	0.05Mg/M3	.15Mg/M3
CHROMIUM COMPOUNDS (INSOLUBLE,% NV) * **	15	18540-29-9	.05Mg/M3	1.00Mg/M3	.05Mg/M3
CADMIUM (% NV) * **	25	7440-43-9	.05Mg/M3	0.20Mg/M3	.05Mg/M3
SELENIUM (% NV)	5	7782-49-2	.20Mg/M3	.20Mg/M3	.20Mg/M3
HEAVY METALS (% NV)	30	NE	NOT EST.	NOT EST.	NOT EST.

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY: \* = NTP \*\* = IARC @ = OSHA # = OTHER

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

BOILING RANGE : 110 - 145 DEG.C	SOLUBILITY IN WATER: 0-1 %
VAPOR PRESSURE: 9-11 mmHg	WT/GAL (LBS): 8-13 (U.S.)
VAPOR DENSITY : HEAVIER THAN AIR	pH: U/I
% VOL/VOLUME : 51-62	% SOLID BY WEIGHT: 45-71
EVAP RATE(BuOAc=100): 109	SPECIFIC GRAVITY: 1.0 - 1.6

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

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 70 DEG. F PMCC  
FLAMMABLE LIMITS: LEL 1.5 UEL U/I

**EXTINGUISHING MEDIA:**

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS 1B FLAMMABLE LIQUID FIRES.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

**SPECIAL FIRE FIGHTING PROCEDURES:**

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

**SECTION V - REACTIVITY DATA**

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

**INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):**

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:

Carbon Monoxide, Lead Oxide, Oxides of Chromium, Cadmium Oxides

**SECTION VI - SPILL OR LEAK PROCEDURES**

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

**WASTE DISPOSAL METHOD:**

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

**SECTION VII - HEALTH HAZARD DATA**

**EFFECTS OF OVEREXPOSURE FROM:**

**INGESTION:**

HARMFUL OR FATAL IF SWALLOWED.

DRIED FILM OF THIS PAINT MAY BE HARMFUL IF CHEWED OR SWALLOWED.

**EYE CONTACT:**

CONTINUED ON PAGE 2



**MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP**

**SECTION I - PRODUCT INFORMATION**

MANUFACTURER'S NAME: PPG INDUSTRIES INC. CODE/IDENTITY :  
 PRODUCT SAFETY LOC.: 260 KAPPA DRIVE TRADE NAME: DURETHANE ENAMEL  
 PITTSBURGH, PA 15235 CHEMICAL FAMILY: POLYESTER  
 MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE US-DOT: PAINT, FLAMMABLE LIQUID  
 AND PRODUCT SAFETY DATE OF PREPARATION: 11/16/87  
 (412) 963-5822 CUSTOMER PART #:  
 EMERGENCY TELEPHONE: (304) 843-1300

APPLIES TO ALL DMU  
BASES WITH THE  
EXCEPTION OF:

DMU759 DMU768  
 DMU760 DMU773  
 DMU767 DMU774

**SECTION II - INGREDIENTS**

	MAXIMUM %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
PIGMENTS	10	NOT EST.	NOT EST.	NOT EST.	NOT EST.
N-BUTYL ACETATE	50	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	50	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

BOILING RANGE : 110 - 145 DEG.C SOLUBILITY IN WATER: 0-1 %  
 VAPOR PRESSURE: 9-11 mmHg WT/GAL (LBS): 8-9 (U.S.)  
 VAPOR DENSITY : HEAVIER THAN AIR pH: U/I  
 % VOL/VOLUME : 51-62 % SOLID BY WEIGHT: 45-54  
 EVAP RATE(BL0Ac=100): 109 SPECIFIC GRAVITY: 1.0 - .1

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

US-DOT CATEGORY: FLAMMABLE  
 FLASHPOINT: 70 DEG. F PMCC FLAMMABLE LIMITS: LEL 1.5 UEL U/I

**EXTINGUISHING MEDIA:**

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS 1B FLAMMABLE LIQUID FIRES.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

**SPECIAL FIRE FIGHTING PROCEDURES:**

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

**SECTION V - REACTIVITY DATA**

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

**INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):**

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:

Carbon Monoxide,

**SECTION VI - SPILL OR LEAK PROCEDURES**

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

**WASTE DISPOSAL METHOD:**

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

**SECTION VII - HEALTH HAZARD DATA**

**EFFECTS OF OVEREXPOSURE FROM:**

**INGESTION:**

HARMFUL OR FATAL IF SWALLOWED.

**EYE CONTACT:**

CAUSES SEVERE EYE IRRITATION.

**SKIN CONTACT:**

MAY CAUSE MODERATE SKIN IRRITATION.

**INHALATION:**

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.  
 REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY SYSTEM AND PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

**MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP**



**SECTION I - PRODUCT INFORMATION**

MANUFACTURER'S NAME: PPG INDUSTRIES INC.	CODE/IDENTITY : DU1000	(0709840)
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE	TRADE NAME: DURETHANE CLEAR	
PITTSBURGH, PA 15238	CHEMICAL FAMILY: POLYESTER	
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE	US-DOT: PAINT, FLAMMABLE LIQUID	
AND PRODUCT SAFETY	DATE OF PREPARATION: 11/09/87	
(412) 963-5822	CUSTOMER PART #:	
EMERGENCY TELEPHONE: (304) 843-1300		

**SECTION II - INGREDIENTS**

	APPROX. %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
N-BUTYL ACETATE	50	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPM	200.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	45	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

BOILING RANGE : 110 - 128 DEG.C	SOLUBILITY IN WATER: 0.3 %
VAPOR PRESSURE: 9.5 mmHg	WT/GAL (LBS): 8.16 (U.S.)
VAPOR DENSITY : HEAVIER THAN AIR	pH: U/I
% VOL/VOLUME : 61.20	% SOLID BY WEIGHT: 45.62
EVAP RATE(BUOAc=100): 114	SPECIFIC GRAVITY: .98

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

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 70 DEG. F PMCC  
FLAMMABLE LIMITS: LEL 1.5 UEL U/I

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

**SECTION V - REACTIVITY DATA**

STABILITY: STABLE  
HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR  
INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:  
Carbon Monoxide, Tin Oxides

**SECTION VI - SPILL OR LEAK PROCEDURES**

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

**SECTION VII - HEALTH HAZARD DATA**

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MODERATE SKIN IRRITATION.

INHALATION:

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.

VAPOR IRRITATES EYES, NOSE, AND THROAT.

REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY SYSTEM AND PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP



SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME: PPG INDUSTRIES INC. CODE/IDENTITY : DU8000 (012387D)  
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE TRADE NAME: GURETHANE WHITE  
PITTSBURGH, PA 15238 CHEMICAL FAMILY: POLYESTER  
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE AND PRODUCT SAFETY US-DOT: PAINT, FLAMMABLE LIQUID  
(412) 963-5822 DATE OF PREPARATION: 12/08/87  
EMERGENCY TELEPHONE: (304) 843-1300 CUSTOMER PART #:

SECTION II - INGREDIENTS

	APPROX. %WT.	CAS NO.	EXPOSURE		LIMITS
			ACGIH TLV	OSHA PEL	PPG IPEL
TITANIUM DIOXIDE	35	13463-67-7	10.00Mg/M3	15.00Mg/M3	10.00Mg/M3
N-BUTYL ACETATE	25	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-85-3	100.00PPM	200.00PPM	100.00PPM
XYLENE	1	1330-20-7	100.00PPM	100.00PPM	100.00PPM
FILM FORMERS, RESINS, AND ADDITIVES	30	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

CARCINOGENIC ACCORDING TO CRITERIA ESTABLISHED BY: \* = NTP \*\* = IARC @ = OSHA # = OTHER

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE : 82 - 145 DEG.C SOLUBILITY IN WATER: 0.2 %  
VAPOR PRESSURE: 9.6 mmHg WT/GAL (LBS): 11.37 (U.S.)  
VAPOR DENSITY : HEAVIER THAN AIR pH: U/I  
% VOL/VOLUME : 48.90 % SOLID BY WEIGHT: 68.50  
EVAP RATE(BuOAc=100): 114 SPECIFIC GRAVITY: 1.36

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 27 DEG. F PMCC FLAMMABLE LIMITS: LEL 1.5 UEL U/I

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS 1B FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

SECTION V - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:

Carbon Monoxide,

SECTION VI - SPILL OR LEAK PROCEDURES

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

SECTION VII - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MOODERATE SKIN IRRITATION.

INHALATION:

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.  
VAPOR IRRITATES EYES, NOSE, AND THROAT.

CONTINUED ON PAGE 2

MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP



SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME: PPG INDUSTRIES INC. CODE/IDENTITY : DU9000 (102687D)  
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE TRADE NAME: DURETHANE ENAMEL  
PITTSBURGH, PA 15236 CHEMICAL FAMILY: POLYESTER  
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE AND PRODUCT SAFETY US-DOT: PAINT, FLAMMABLE LIQUID  
(412) 963-5822 DATE OF PREPARATION: 12/09/87  
EMERGENCY TELEPHONE: (304) 843-1300 CUSTOMER PART #:

SECTION II - INGREDIENTS

	APPROX. %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
CARBON BLACK	1	1333-86-4	3.50mg/M3	3.50mg/M3	3.50mg/M3
N-BUTYL ACETATE	45	123-86-4	150.00PPM	150.00PPM	150.00PPM
TOLUENE	5	108-88-3	100.00PPH	200.00PPH	100.00PPH
FILM FORMERS, RESINS, AND ADDITIVES	45	PROPRIETARY	NOT EST.	NOT EST.	NOT EST.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE : 82 - 128 DEG.C SOLUBILITY IN WATER: 0.3 %  
VAPOR PRESSURE: 9.5 mmHg WT/GAL (LBS): 8.49 (U.S.)  
VAPOR DENSITY : HEAVIER THAN AIR pH: U/I  
% VOL/VOLUME : 57.30 % SOLID BY WEIGHT: 49.99  
EVAP RATE(BUDAC=100): 113 SPECIFIC GRAVITY: 1.01

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 27 DEG. F PMCC FLAMMABLE LIMITS: LEL 1.5 UEL U/I

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

SECTION V - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED. WELDING, BRAZING, OR FLAME-CUTTING ON SURFACES COATED WITH THIS PRODUCT MAY PRODUCE FUMES INCLUDING:  
Carbon Monoxide,

SECTION VI - SPILL OR LEAK PROCEDURES

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

SECTION VII - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MODERATE SKIN IRRITATION.

INHALATION:

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.

VAPOR IRRITATES EYES, NOSE, AND THROAT.

REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY  
CONTINUED ON PAGE 2

MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP



SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME: PPG INDUSTRIES INC. CODE/IDENTITY : DTU801 (092287D)  
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE TRADE NAME: POLYURETHANE REDUCER (60-85F)  
PITTSBURGH, PA 15238 CHEMICAL FAMILY: SOLVENT BLEND  
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE AND PRODUCT SAFETY US-DOT: PAINT RELATED MATERIAL; FLAMMABLE LIQUID  
(412) 963-5822 DATE OF PREPARATION: 11/09/87  
EMERGENCY TELEPHONE: (304) 843-1300 CUSTOMER PART #:

SECTION II - INGREDIENTS

	APPROX. %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
N-BUTYL ACETATE	80	123-86-4	150.00PPM	150.00PPM	150.00PPM
METHYL ETHYL KETONE	10	78-93-3	200.00PPM	200.00PPM	200.00PPM
METHYL ISOBUTYL KETONE	5	108-10-1	50.00PPM	100.00PPM	50.00PPM

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE : 78 - 128 DEG.C SOLUBILITY IN WATER: 3.9 %  
VAPOR PRESSURE: 19.8 mmHg WT/GAL (LBS): 7.22 (U.S.)  
VAPOR DENSITY : HEAVIER THAN AIR pH: U/I  
% VOL/VOLUME : 100.0 % SOLID BY WEIGHT: .01  
EVAP RATE(BuOAc=100): 183 SPECIFIC GRAVITY: .87

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 26 DEG. F PMCC FLAMMABLE LIMITS: LEL 1.7 UEL U/I

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

SECTION V - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED, INCLUDING:  
Carbon Monoxide,

SECTION VI - SPILL OR LEAK PROCEDURES

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

SECTION VII - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES SEVERE EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MODERATE SKIN IRRITATION.

INHALATION:

VAPOR AND SPRAY MIST HARMFUL IF INHALED.

VAPOR IRRITATES EYES, NOSE, AND THROAT.

REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY SYSTEM AND PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS CAN BE HARMFUL



MATERIAL SAFETY DATA SHEET  
COATINGS AND RESINS GROUP



SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME: PPG INDUSTRIES INC. CODE/IDENTITY : DTU800 (080684D)  
PRODUCT SAFETY LOC.: 260 KAPPA DRIVE TRADE NAME: POLYURETHANE METALLIC COLOR REDUCER  
PITTSBURGH, PA 15238 CHEMICAL FAMILY: SOLVENT BLEND  
MSDS CONTACT: MANAGER, INDUSTRIAL HYGIENE AND PRODUCT SAFETY US-DOT: PAINT RELATED MATERIAL, FLAMMABLE  
(412) 963-5022 DATE OF PREPARATION: 11/09/87  
EMERGENCY TELEPHONE: (304) 843-1300 CUSTOMER PART #:

SECTION II - INGREDIENTS

	APPROX. %WT.	CAS NO.	EXPOSURE LIMITS		
			ACGIH TLV	OSHA PEL	PPG IPEL
ETHYL ACETATE	60	141-78-6	400.00PPH	400.00PPH	400.00PPH
LIGHT ALIPHATIC SOLVENT NAPHTHA	15	64742-89-8	NOT EST.	NOT EST.	NOT EST.
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	20	108-65-6	NOT EST.	NOT EST.	NOT EST.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE : 75 - 146 DEG.C SOLUBILITY IN WATER: 17.7 %  
VAPOR PRESSURE: 54.1 mmHg WT/GAL (LBS): 7.37 (U.S.)  
VAPOR DENSITY : HEAVIER THAN AIR pH: U/I  
% VOL/VOLUME : 100.0 % SOLID BY WEIGHT: .01  
EVAP RATE(BUOAc=100): 408 SPECIFIC GRAVITY: .88

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

US-DOT CATEGORY: FLAMMABLE  
FLASHPOINT: 54 DEG. F PMCC FLAMMABLE LIMITS: LEL 2.3 UEL U/I

EXTINGUISHING MEDIA:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL, OR UNIVERSAL AQUEOUS FILM FORMING FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS, AND OPEN FLAMES. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES. TOXIC GASES MAY FORM WHEN PRODUCT IS CONTACTED BY FLAME OR HOT SURFACES.

SPECIAL FIRE FIGHTING PROCEDURES:

WATER SPRAY MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. FIRE-FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

SECTION V - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: NOT EXPECTED TO OCCUR

INCOMPATIBILITY (MATERIALS AND CONDITIONS TO AVOID):

AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS WHEN HEATED, INCLUDING:  
Carbon Monoxide,

SECTION VI - SPILL OR LEAK PROCEDURES

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

PROVIDE MAXIMUM VENTILATION. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN AND EYE PROTECTION SHOULD BE PERMITTED IN THE AREA. REMOVE ALL SOURCES OF IGNITION. TAKE UP SPILLED MATERIAL WITH SAWDUST, VERMICULITE, OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

SECTION VII - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE FROM:

INGESTION:

HARMFUL OR FATAL IF SWALLOWED.

EYE CONTACT:

CAUSES EYE IRRITATION.

SKIN CONTACT:

MAY CAUSE MODERATE SKIN IRRITATION.  
MAY BE ABSORBED THROUGH THE SKIN.

INHALATION:

VAPOR AND SPRAY MIST MAY BE HARMFUL IF INHALED.  
VAPOR IRRITATES EYES, NOSE, AND THROAT.  
REPEATED EXPOSURE TO HIGH VAPOR CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY SYSTEM AND PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

CONTINUED ON PAGE 2

# MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

NPCA 1-72  
(Similar to Form OSHA-20)

Date of PREP: 9/19/84

## SECTION I

Manufacturer's Name: PPG Industries, Inc. Coatings & Resins Group  
Address: 3800 W. 143rd Street -Cleveland, Oh 44111  
Attn: Technical Manager, AutoRefinish  
Emergency Telephone: (304) 843-1300

Product Class: POLYESTER

Manufacturer Code: **DU81485**

Trade Name: DURETHANE **YELLOW**

(090684C)

## SECTION II - HAZARDOUS INGREDIENTS

INGREDIENTS	% WEIGHT	*TLV(1984)	**PPG IPEL	CASNO	LEL	V P
N-BUTYL ACETATE	30	150 00 PPM	.	123-86-4	1.3	10
LEAD CHROMATE	25	05Mg/M3	.	7758-97-6	N/A	N/A
XYLENE	< 5	100 00 PPM	.	1330-20-7	1.1	6 3
TOLUENE	< 5	100 00 PPM	.	108-88-3	1.2	22 4

LEAD = 26.1% AS N.V.

## SECTION III - PHYSICAL DATA

Boiling Range: 110-145 DEG.C. Vapor Density - HEAVIER THAN AIR  
Evaporation Rate = SLOWER THAN ETHER % Volatile/Vol: 55.83 Wt/Gal: 11.01

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT Category: FLAMMABLE Flashpoint: 27 DEG.F. PMCC LEL 1 6  
Extinguishing Media:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL OR FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

### Unusual Fire & Explosion Hazards:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES

### Special Fire Fighting Procedures:

WATER SPRAY MAY BE INEFFECTIVE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE.

## SECTION V - HEALTH HAZARD DATA

Threshold Limit Value: SEE SEC. II

### Effects of Overexposure:

INHALATION: ANESTHETIC, IRRITATION OF THE RESPIRATORY TRACT OR ACUTE NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY THE FOLLOWING PROGRESSIVE STEPS: HEADACHE, DIZZINESS, STAGGERING GAIT, CONFUSION, UNCONSCIOUSNESS, OR COMA  
SKIN OR EYE CONTACT: PRIMARY IRRITATION  
LEAD POISONING IS CHARACTERIZED BY METALLIC TASTE IN MOUTH, LOSS OF APPETITE, INDIGESTION, NAUSEA, VOMITING, CONSTIPATION, ABDOMINAL CRAMPS, DISTURBANCE OF REST AND SLEEP, AND WEAKNESS

### Emergency and First Aid Procedures:

FUMES: REMOVE FROM EXPOSURE. RESTORE BREATHING. KEEP WARM AND QUIET. NOTIFY A PHYSICIAN. SPLASH (EYES): FLUSH IMMEDIATELY WITH COPIOUS QUANTITIES OF RUNNING WATER FOR AT LEAST 15 MINUTES. TAKE TO A PHYSICIAN FOR DEFINITIVE MEDICAL TREATMENT. SPLASH (SKIN): WASH AFFECTED AREAS WITH WATER. REMOVE CONTAMINATED CLOTHING CONSULT A PHYSICIAN.

## SECTION VI - REACTIVITY DATA

STABILITY: STABLE Conditions to Avoid: UNKNOWN

Incompatibility (Materials to Avoid): UNKNOWN

Hazardous Decomposition Products:

May produce hazardous fumes when heated to decomposition as in welding.  
Fumes may contain: Carbon Monoxide and  
Lead Oxide, Oxides of Chromium

Continued on Page 2

NOTE: \* - Threshold Limit Value established by American Conference of Governmental Industrial Hygienists

\*\* - PPG'S Internal Permissible Exposure Limit

# MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

NPCA 1-72

Date of PREP: 9/19/84

(Similar to Form OSHA-20)

## SECTION I

Manufacturer's Name: PPG Industries, Inc. Coatings & Resins Group  
Address: 3800 W. 143rd Street -Cleveland, Oh 44111  
Attn: Technical Manager, AutoRefinish  
Emergency Telephone: (304) 843-1300

Product Class: POLYESTER

Manufacturer Code: **DU71654**

Trade Name: DURETHANE *RED*

(090684C)

## SECTION II - HAZARDOUS INGREDIENTS

INGREDIENTS	% WEIGHT	*TLV(1984)	**PPG IPEL	CASNO	LEL	V P
N-BUTYL ACETATE	35	150.00 PPM		123-86-4	1.3	10
CADMIUM SULFOSELENIDE PIGMENT	25	0.05Mg/M3		N E	N/A	N/A
TOLUENE	< 5	100.00 PPM		108-88-3	1.2	22.4
XYLENE	< 5	100.00 PPM		1330-20-7	1.1	6.3

## SECTION III - PHYSICAL DATA

Boiling Range: 110-145 DEG.C.

Vapor Density - HEAVIER THAN AIR

Evaporation Rate - SLOWER THAN ETHER

% Volatile/Vol: 58.14

Wt/Gal: 10.24

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT Category: FLAMMABLE

Flashpoint: 27 DEG. F. PMCC

LEL: 1.6

### Extinguishing Media:

USE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CLASS B EXTINGUISHERS (CARBON DIOXIDE, DRY CHEMICAL OR FOAM) DESIGNED TO EXTINGUISH NFPA CLASS IB FLAMMABLE LIQUID FIRES.

### Unusual Fire & Explosion Hazards:

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT. ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY ON HOT SURFACES.

### Special Fire Fighting Procedures:

WATER SPRAY MAY BE INEFFECTIVE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTOIGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE.

## SECTION V - HEALTH HAZARD DATA

Threshold Limit Value: SEE SEC. II

### Effects of Overexposure:

INHALATION: ANESTHETIC. IRRITATION OF THE RESPIRATORY TRACT OR ACUTE NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY THE FOLLOWING PROGRESSIVE STEPS: HEADACHE, DIZZINESS, STAGGERING GAIT, CONFUSION, UNCONSCIOUSNESS, OR COMA  
SKIN OR EYE CONTACT: PRIMARY IRRITATION

### Emergency and First Aid Procedures:

FUMES: REMOVE FROM EXPOSURE. RESTORE BREATHING. KEEP WARM AND QUIET. NOTIFY A PHYSICIAN. SPLASH (EYES) FLUSH IMMEDIATELY WITH COPIOUS QUANTITIES OF RUNNING WATER FOR AT LEAST 15 MINUTES. TAKE TO A PHYSICIAN FOR DEFINITIVE MEDICAL TREATMENT. SPLASH (SKIN) WASH AFFECTED AREAS WITH WATER. REMOVE CONTAMINATED CLOTHING. CONSULT A PHYSICIAN.

## SECTION VI - REACTIVITY DATA

STABILITY: STABLE Conditions to Avoid: UNKNOWN

Incompatibility (Materials to Avoid): UNKNOWN

Hazardous Decomposition Products:

May produce hazardous fumes when heated to decomposition as in welding  
Fumes may contain: Carbon Monoxide and

Hazardous Polymerization - WILL NOT OCCUR

CONDITIONS TO AVOID: UNKNOWN

## SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:

Continued on Page 2

NOTE: \* - Threshold Limit Value established by American Conference of Governmental Industrial Hygienists  
\*\* - PPG'S Internal Permissible Exposure Limit

## MATERIAL SAFETY DATA SHEET

## SECTION I - MANUFACTURERS INFORMATION

PRODUCT CODE IDENTITY: 975C455 PRODUCT NAME: ACROTHANE CLEAR BS.COMP.A  
: COOK PAINT AND VARNISH COMPANY DATE OF MSDS: 11/23/85  
ESS: P.O. BOX 389  
KANSAS CITY, MISSOURI 64141 EMERGENCY TELEPHONE: 816-391-6000  
INFORMATION TELEPHONE: 816-391-6003

ATTN: SAFETY AND HEALTH OFFICER  
SEA RAY BOATS-FL  
2700 N COURTNEY PKWY  
MERRIT ISLD FL 32920

CUSTOMER NUMBER: 220094  
DATE PRINTED: 12/18/85

## SECTION II - HAZARDOUS INGREDIENTS

DIETHYLENE GLYCOL MONOMETHYL ETHER ACETATE

CAS #: 108-65-5 PERCENT: 10.000 VAPOR PRESSURE: 3.7

EXPOSURE LIMIT:  
ACGIH TLV/TWA: NONE ESTABLISHED  
OSHA PEL: NONE ESTABLISHED

DIETHYLENE

CAS #: 1330-20-7 PERCENT: 25.000 VAPOR PRESSURE: 6.0

EXPOSURE LIMIT:  
ACGIH TLV/TWA: 100 PPM (435 MG/CU.M.)  
ACGIH TLV/STEL: 150 PPM (655 MG/CU.M.)  
OSHA PEL: 100 PPM (435 MG/CU.M.)

DIBUTYL ETHYL KETONE

CAS #: 78-93-3 PERCENT: 20.000 VAPOR PRESSURE: 71.0

EXPOSURE LIMIT:  
ACGIH TLV/TWA: 200 PPM (590 MG/CU.M.)  
ACGIH TLV/STEL: 300 PPM (885 MG/CU.M.)  
OSHA PEL: 200 PPM (590 MG/CU.M.)

## SECTION III - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE TO PRODUCT. PRIMARY ROUTES OF ENTRY ARE:

EYE CONTACT: LIQUID AND VAPOR CAN BE IRRITATING TO EYES. SYMPTOMS ARE  
TEARING, REDNESS AND DISCOMFORT.

SKIN CONTACT: CAN CAUSE IRRITATION. CAN CAUSE DEFATTING OF SKIN WHICH CAN  
LEAD TO DERMATITIS.

INHALATION: ANESTHETIC. OVEREXPOSURE CAN CAUSE IRRITATION TO UPPER RES-  
PIRATORY TRACT. CONTINUED OVEREXPOSURE CAN LEAD TO CENTRAL  
NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY THE FOLLOWING PRO-  
GRESSIVE STEPS IF SEVERE OVEREXPOSURE IS CONTINUED: HEADACHE,  
DIZZINESS, NAUSEA AND LOSS OF CONSCIOUSNESS.

REPORTS HAVE ASSOCIATED REPEATED OR PROLONGED OCCUPATIONAL OVEREXPOSURE TO  
SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE  
BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR  
FATAL.

INGESTION: SWALLOWING CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA,  
VOMITING AND DIARRHEA.

EMERGENCY AND FIRST AID PROCEDURES:

IN CASE OF EYE CONTACT, FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST  
15 MINUTES AND GET MEDICAL ATTENTION; FOR SKIN, WASH THOROUGHLY WITH SOAP AND  
WATER WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. WASH CONTAMINATED  
CLOTHING. THOROUGHLY CLEAN CONTAMINATED SHOES. IF AFFECTED BY INHALATION OF

**MATERIAL SAFETY DATA SHEET**  
FOR COATINGS, RESINS, AND RELATED MATERIALS

DATE OF PREP 12-20-84

**Section I**

MANUFACTURER'S NAME Inmont Corporation

STREET ADDRESS 6125 Industrial Parkway, P.O. Box 2757 CITY, STATE AND ZIP CODE Whitehouse, Ohio 43571

EMERGENCY TELEPHONE NO (419) 877-5308 or (201) 365-3512

PRODUCT CLASS Paint UN1263

MANUFACTURER'S CODE IDENTIFICATION  
Q13KJ001.820924

TRADE NAME A946 Black Alpha-Cryl

**Section II — HAZARDOUS INGREDIENTS**

INGREDIENT	PERCENT By Weight	TLV			LEL	VAPOR PRESSURE mm Hg
		PPM	mg/M <sup>3</sup>			
Toluene (108-88-3)	30	100	375		1.2	22
Acetone (67-64-1)	15	750	1780		2.6	187
Xylene (1330-20-7)	5	100	435		1.0	5.1
Methyl Ethyl Ketone (78-93-3)	15	200	590		1.8	71
Propylene Glycol Methyl Ether Acetate (108-65-6)	5	--	--		1.3	3.7

**Section III — PHYSICAL DATA**

BOILING POINT (Estimated) 134°-370°F.

VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR

CLASSIFICATION  FLAMMABLE  SLOWER THAN OTHER

PERCENT VOLATILE BY VOLUME 74.7

WEIGHT PER GALLON 7.77 lbs.

**Section IV — FIRE AND EXPLOSION HAZARD DATA**

FLAMMABLE (CLASSIFICATION) Flammable B

FLASHPOINT 21°+5°F. S.C.C.

LEL See Section II

EXTINGUISHING MEDIA Foam Carbon Dioxide — Chemical Powder

HAZARD STATEMENT (Hazard Codes) Keep container tightly closed. Avoid heat, open flames, static electricity, electrical equipment and sparks. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency situation, over-exposure to decomposition products may cause a health hazard with no symptoms immediately apparent. Obtain medical attention.

PREVENTIVE MEASURES (Precautions) Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

# MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Department of Labor Essentially Similar to Form OSHA-20)

DATE OF PREP 1-23-84

## Section I

MANUFACTURER'S NAME U.S. Paint, Division of Grow Group, Inc.

STREET ADDRESS 831 S. 21st Street CITY, STATE, AND ZIP CODE St. Louis, Missouri 63103

EMERGENCY TELEPHONE NO.  
INFORMATION TELEPHONE NO. 314-621-0525  
PRODUCT CLASS Epoxy

MANUFACTURERS CODE IDENTIFICATION \* 73057 Kit Containing  
73056-Base  
73055-Converter

TRADE NAME HULL-GARD™ ER Epoxy Primer

\*(Information contained herein is for converted product.)

## Section II — HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV		LEL	VAPOR PRESSURE
		PPM	mg/M <sup>3</sup>		
Xylol	10	100		1.1	6
Methyl n-Amyl Ketone	10	100		1.11	2.6
n-Butyl Alcohol	10	100		1.4	5.5

## Section III — PHYSICAL DATA

BOILING RANGE 210 - 302°F VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR

EVAPORATION RATE  FASTER  SLOWER THAN ETHER PERCENT VOLATILE BY VOLUME 55% WEIGHT PER GALLON 11.7

## Section IV — FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 29 CFR-1910.106(a) Parts 18-19 FLASH POINT Over 79°F Pinsky-Martens LEL See Section II  
Liquid Class 1C Flammable Liquid Closed Cup

EXTINGUISHING MEDIA CO<sub>2</sub>, Dry Chemical, Foam or other National Fire Protection Association (NFPA) approved method for treating a Class B fire.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

Due to pressure build-up, closed containers exposed to extreme heat may explode. Never use a welding or cutting torch on or near container (even empty) as product or its residue may ignite.

**SPECIAL FIRE FIGHTING PROCEDURES**

Where possible, isolate containers from heat, electrical equipment, sparks and flame.  
Use full protective equipment including self-contained breathing apparatus.  
Water spray may be ineffective. If water is used, fog nozzles are preferable.  
If exposed to fire or extreme heat, water should be used to cool closed containers and prevent pressure build-up or possible rupture.

INTERNATIONAL PAINT CO., INC.  
2270 MORRIS AVENUE  
LINDEN, NJ 07033

**BEST AVAILABLE COPY**  
**MATERIAL SAFETY DATA SHEET**  
FOR COATINGS, RESINS, AND RELATED MATERIAL

TELEPHONE NO.: (201) 686-1300  
EMERGENCY TELEPHONE NO.: (201) 686-1300  
DATE OF PREP.: 03/18/86  
T01 16364/A0/01

(APPROVED BY US DEPARTMENT OF LABOR ESSENTIALLY SIMILAR TO FORM OSHA-2.

SEA RAY YACHTS  
100 SEA RAY DRIVE  
MERRITT ISLAND, FL

ATTN: CHARLIE REEVES 32953

PROD. NO.: XU0340  
PROD. NAME: MICRON 44 BLUE  
PROD. CLASS:

**SECTION TWO HAZARDOUS INFORMATION**

317-39-1 CUPROUS OXIDE  
COPPER OXIDE (CU2O)  
23-31-9 HYDROQUINONE  
1,4-BENZENEDIOL  
330-20-7 XYLENE  
DIMETHYLBENZENE  
1-36-3 N-BUTYL ALCOHOL  
1-BUTANOL  
6-35-9 TRIBUTYL TIN OXIDE  
DISTANNOXANE, HEXABUTYL-  
4-74-2 DIBUTYL PHTHALATE  
1,2-BENZENEDICARBOXYLIC ACID  
ROP. ORGANOTIN COPOLYMER  
PROPRIETARY

% WT.	OCCUPATIONAL EXPOSURE		VAP. PRESS. (mm Hg)
	TLV	PEL	
45-50	1.00 PPM	1.00 PPM	N/A
0-1	2.00 MG/M3	2.00 MG/M3	N/A
20-25	100.00 PPM	100.00 PPM	10.0*
0-1	50.00 PPM	100.00 PPM	4.0*
0-1	0.10 MG/M3	0.10 MG/M3	N/A
0-1	5.00 MG/M3	5.00 MG/M3	N/A
15-20	0.10 MG/M3	0.10 MG/M3	N/A

0.75 SOLIDS

AT 20 DEG. C N/A = NOT AVAILABLE

**SECTION THREE PHYSICAL DATA**

BOILING RANGE 280-280 DEG. F VAPOR DENSITY: HEAVIER  SLOWER THAN ETHER  LIGHTER THAN AIR   
EVAPORATION RATE: FASTER  % VOLATILE VOLUME 25 WT/GAL 14.4

**SECTION FOUR FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY CLASSIFICATION: OSHA: FLAMMABLE, CLASS I C DOT: FLAMMABLE  
FLASH PT: 81 DEG. F LEL: 1.0 PERCENT BY VOLUME  
EXTINGUISHING MEDIA: FOAM  ALCOHOL FOAM  CO2  DRY CHEMICAL  WATERFOG  OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS  
CONTAINS FLAMMABLE SOLVENT. DO NOT USE IN AREAS WHERE SPARK OR OPEN FLAME ARE PRESENT.

SPECIAL FIRE FIGHTING PROCEDURES  
SMOTHER FLAMES WITH ONE OF THE ABOVE EXTINGUISHING MEDIA.  
WATER MAY BE USED TO COOL UNOPENED CONTAINERS, BUT MUST NOT BE USED AS AN EXTINGUISHING MEDIA. TAKE CARE TO PREVENT SPREAD OF BURNING LIQUID WITH WATER.  
CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT.

MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER: ITW-PHILADELPHIA RESINS CORPORATION  
 ADDRESS: 130 COMMERCE DRIVE, MONTGOMERYVILLE PA. 18936  
 EMERGENCY PHONE NO.: 215-855-8450

PRODUCT NAME: CLASSIC YACHT CLEAR AEROSOL ANTIFOULANT COATING.

PRODUCT CLASS: (AEROSOL) COATINGS

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	TLV PPM	TLV MG/M3	PEL PPM	LEL
1. TRIBUTYL TIN METHACRYLATE	N.E.	0.10	N.E.	NONE
2. VM & P NAPHTHA	300	2000	500	.9
3. XYLENE	100	435	100	1.1
4. GLYCOL ETHER PM ACETATE	1	N.E.	N.E.	1.3
PROPYLENE GLYCOL MONOMETHER ETHER	100	360	100	NONE
6. METHYL AMYL KETONE	100	465	100	1.1
7. ACETONE	750	1780	1000	2.6
8. ETHYL -ETHOXYPROPIONATE	50	N.E.	N.E.	1.0
9. DME DIMETHYL ETHER	1000	N.E.	N.E.	3.4

AEROSOL - CONTENTS UNDER PRESSURE-----52+/- 5 PSIG

CARCINOGENICITY: THIS PRODUCT IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

SECTION III - PHYSICAL DATA

BOILING RANGE: PROPELLANT BELOW 0.0 F	VAPOR DENSITY: HEAVIER THAN AIR
EVAPORATION RATE: FASTER THAN ETHER: (PROPELLANTS)	PERCENT VOLATILE BY WT: 81 WEIGHT PER GALLON: N.A.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: PROPELLANT BELOW 20 F TAG OPEN CUP LEL: SEE SECTION II



MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER: NEW-PHILADELPHIA RESINS CORPORATION  
 ADDRESS: 100 COMMERCE DRIVE, MONTGOMERYVILLE PA. 18936  
 EMERGENCY PHONE NO.: 215-855-8450  
 PRODUCT NAME: CLASSIC YACHT PREP WASH 305  
 FORMULA: MIXTURE

SECTION II - HAZARDOUS INGREDIENTS

IDENTITY	HAZARD DATA	NATURE OF HAZARD
1. PHOSPHORIC ACID	ACGIH TLV=1mg/m3	CORROSIVE, SKIN IRRITANT, TOXIC
2. 2-BUTOXYETHANOL	ACGIH TLV=25 PPM	INHALATION HAZARD
3. FLUOROBORIC ACID	ACGIH TLV=N. E.	TOXIC, HEPATOXIN, NEPHROTOXIN

SECTION III - PHYSICAL DATA

APPEARANCE AND ODOR: WATER WHITE LIQUID, MILD ODOR  
 BOILING POINT: 250 DEGREES F | VAPOR DENSITY(AIR=1): 4.1  
 EVAPORATION RATE:(BUTYL ACETATE=1):0.08 | VAPOR PRESSURE(mmHg): 0.6  
 SOLUBILITY IN WATER: COMPLETELY | SPECIFIC GRAVITY(WATER=1): 1.154 @ 60F  
 REACTIVITY IN WATER: NONE | MELTING POINT: N.A.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

- A. FLASH POINT: 150 DEGREES F, TAG CLOSED CUP
- B. FLAMMABLE LIMITS: NOT DETERMINED
- C. AUTOIGNITION TEMPERATURE: NOT DETERMINED
- D. EXTINGUISHING AGENT: USE WATER SPRAY, CARBON DIOXIDE, DRY CHEMICAL, UNIVERSAL FOAMS.
- E. SPECIAL FIRE FIGHTING PROCEDURES: USE SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.
- F. UNUSUAL FIRE AND EXPLOSION HAZARDS: AVOID EXPOSURE OF SKIN AND EYES FROM MIST AND SPLASHES.

MATERIAL SAFETY DATA SHEET

05/87

SECTION I

MANUFACTURER'S NAME AND FSCM (Federal Supply Code for Manufacturers)		EMERGENCY PHONE NO.
ITW Philadelphia Resins Corporation		215/855-8450
ADDRESS (Number, Street, City, State, and ZIP Code)		
130 Commerce Drive, Montomeryville, PA 18936		
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS	
Vinyl Solution	CLASSIC YACHT™ #202 Primer	
CHEMICAL FAMILY	FORMULA	
Vinyl Primer		Mixture
FEDERAL STOCK NUMBER (FSN)	GROSS WEIGHT (LBS)	OUTSIDE PACKAGE DIMENSIONS (Inches)
MIL-STD-1341/NATIONAL FIRE PROTECTION ASSOCIATION STD 704M SIGNAL		
FLAMMABILITY	HEALTH	REACTIVITY
3	2	0
SPECIFIC HAZARD		

SECTION II - HAZARDOUS INGREDIENTS

IDENTITY		Hazard Data	NATURE OF HAZARD
1. Ethyl 3 - Ethoxy Propionate (EEP)	CAS # 763-69-3	OSHA PEL & TLV not established Mfg recom. TLV=50ppm	Eye Irritant, Slight Skin irritant, Combustible
2. Xylene (Dimethyl Benzene)	1330-20-7	TLV = 100ppm (8hr TWA)	Respiratory hazard Flammable
3. Methyl n-Amyl Ketone (MAK)	110-43-0	ACGIH TLV=100ppm	Respiratory Hazard
4. Vinyl-Chloride-Vinyl Acetone Resin		TLV= not established	Respiratory Hazard

SECTION III  
PHYSICAL DATA

BOILING POINT (°F.)	278°F	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	0.93
VAPOR PRESSURE (mm Hg.)	Unknown	PERCENT VOLATILE BY VOLUME (%)	77%
VAPOR DENSITY (AIR = 1)	> 1	EVAPORATION RATE (Butyl Acetate)	0.4 for MAK
SOLUBILITY IN WATER	Slight		
APPEARANCE AND ODOR Clear liquid with solvent odor			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	79°F Tag Closed Cup	FLAMMABLE LIMITS	LOWER EXPLOSIVE LIMIT For Xylene = 1.1	UPPER EXPLOSIVE LIMIT 6.6
EXTINGUISHING MEDIA Foam, Dry Chemical, CO <sub>2</sub> , Water Foam				
SPECIAL FIRE FIGHTING PROCEDURES Self-contained breathing apparatus should be worn in fighting chemical fires.				
UNUSUAL FIRE AND EXPLOSION HAZARDS None known				

# MATERIAL SAFETY DATA SHEET

NPCA 1-78

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U. S. Department of Labor Essentially Similar to Form OSHA 20)

DATE OF PREP 1/17/80

## Section I

MANUFACTURERS NAME **MOONEY CHEMICALS, INC.**

STREET ADDRESS **2301 Scranton Road** CITY, STATE, AND ZIP CODE **Cleveland, Ohio 44113**

EMERGENCY TELEPHONE NO **(216) 781-8383**

PRODUCT CLASS **Paint Drier**

MANUFACTURERS CODE IDENTIFICATION

TRADE NAME **12% COBALT HEX-CEM**

Code 51

## Section II — HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV		LEL	VAPOR PRESSURE
		PPM	mg/M <sup>3</sup>		
Cobalt Octoate LD <sub>50</sub> Value=50-500 mg/kg (Sax, 1963)	65				
Mineral Spirits (W) -petroleum distillates (naphtha) (OSHA, 29 CFR 1910.1000) -mineral spirits, (NIOSH Recommendation, 1977) -oral, human LDLo: 500 mg/kg (RTECS, 1977)	35	500	2000  350	1.0%	2 mm Hg@ 20°C

## Section III — PHYSICAL DATA

BOILING RANGE **302-399°**

VAPOR DENSITY  HEAVIER  LIGHTER THAN AIR

EVAPORATION RATE  FASTER  SLOWER THAN ETHER

PERCENTAGE VOLATILE BY VOLUME Wt. **35%**

WEIGHT PER GALLON **8.4 Lbs.**

## Section IV — FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION **Combustible Liquid Class II** FLASH POINT **104°F** LEL **1.0%**

DOT CATEGORY: **Combustible liquid**

EXTINGUISHING MEDIA **Regular foam, carbon dioxide, dry chemical.**

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, other flames and ignition sources at locations distant from material handling point.

UNUSUAL FIRE AND EXPLOSION HAZARDS **Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.**

EXHIBIT "A" - PART 3

POTENTIAL EMISSIONS

STYRENE:

$$(5.0 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 43,680 \text{ \#/yr} = 21.8 \text{ T/y}$$

METHYL  
METHACRYLATE:

$$(1.76 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 15,375 \text{ \#/yr} = 7.7 \text{ T/yr}$$

ACETONE:

$$(28.2 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 246,355 \text{ \#/yr} = 123.2 \text{ T/y}$$

1,1,1-TRICHLOROETHANE:

$$(.1428 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 1,248 \text{ \#/yr} = 0.62 \text{ T/y}$$

TOLUENE:

$$(.0168 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 147 \text{ \#/yr} = 0.07 \text{ T/y}$$

MISC: \*\*\*

$$(0.13 \text{ \#/hr})(52 \text{ wk/yr} \times 7 \text{ day/wk} \times 24 \text{ hr/day}) = 1,136 \text{ \#/yr} = 0.57 \text{ T/y}$$

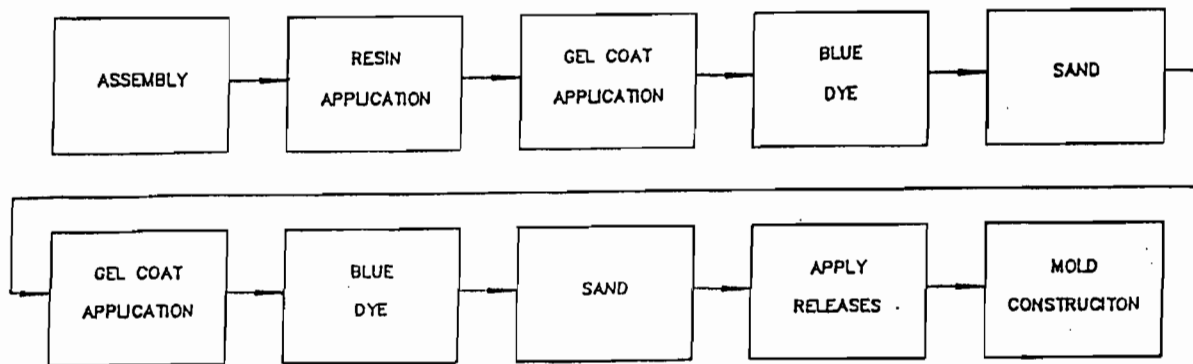
\*\* In September, Res-Away was introduced to the P. D. & E. facility.  
Now the average use of acetone has been decreased to approximately  
500 gallons per week with 225 gallons per week sent to be recycled,  
giving a net usage of acetone of 275 gallons per week. Therefore:

$$(275 \text{ gal/wk}) \times (6.61 \text{ \#/gal}) = 1,817.75 \text{ \#/wk} \times 52 \text{ wks/yr} = 94,523 \text{ \#/yr} \\ = 47.26 \text{ T/yr}$$

\*\*\* SEE NOTE ON PAGE 4 OF APPLICATION

EXHIBIT "B"

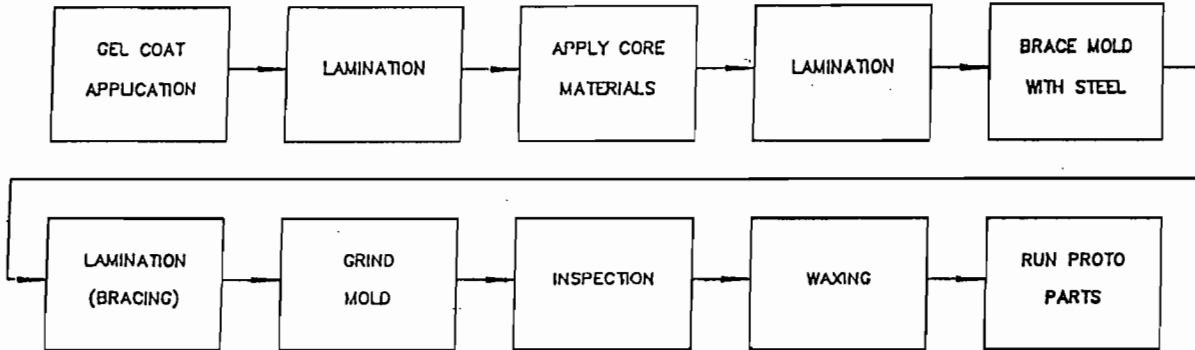
## MASTERS



### Step 1 Masters

- a. Master is assembled per drawing by Master Design and delivered to Product Tooling.
- b. Resin coat to seal - sprayed on in gel coat booth.
- c. Apply sanding gel coat to specification - sprayed on in gel coat booth.
- d. Blue dye completely - by hand outside.
- e. Ruff block (dry) - by hand outside.
- f. Apply production gel coat to specification - sprayed on in gel coat booth.
- g. Blue dye completely - by hand outside.
- h. Fine block (wet) - by hand outside.
- i. Apply releases - by machine and hand inside.
- j. Master is ready for mold construction.

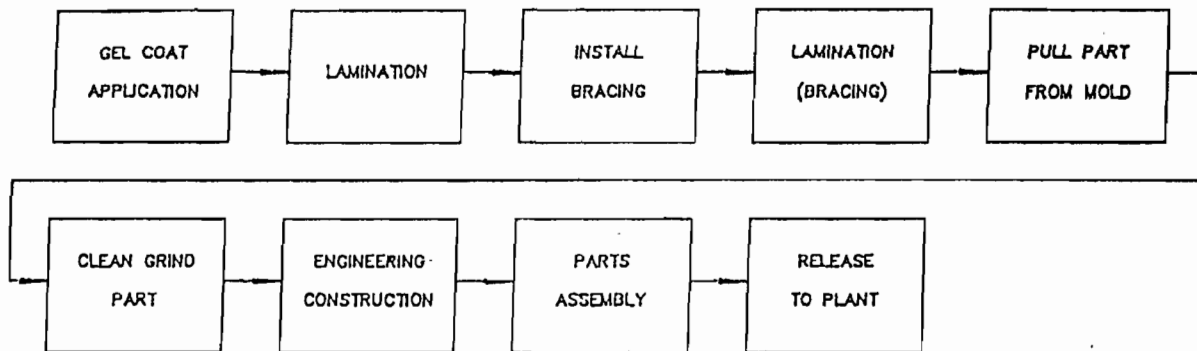
## MOLDS



### Step 2 Molds

- a. Apply lead-free tooling gel coat to specification - sprayed on in gel coat booth.
- b. Apply laminates to specification - by hand on lamination floor.
- c. Apply core materials - by hand on lamination floor.
- d. Apply laminates to specification - by chop gun on lamination floor.
- e. Brace mold with steel - by hand on welding floor.
- f. Apply laminates to bracing - by hand and gun on lamination floor.
- g. Grind mold to pull - by machine outside.
- h. Pull mold and inspect - pulling area inside.
- i. Mold is ready to be waxed and run for proto part.

## PARTS



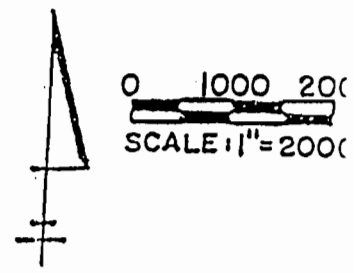
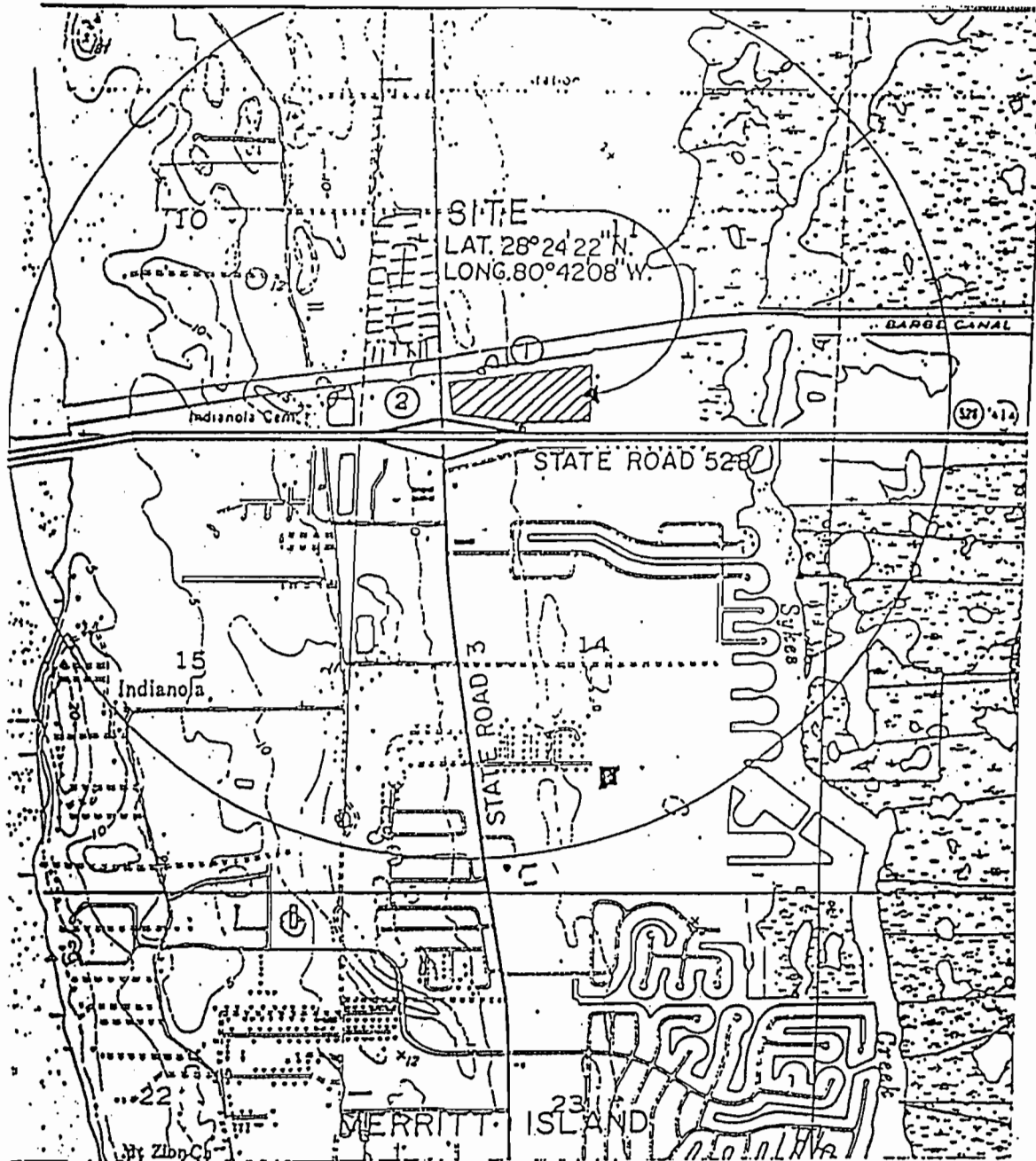
### Step 3 Parts

- a. Apply production gel coat to specification - sprayed on in gel coat booth.
- b. Apply laminates to specification - by hand and gun on lamination floor.
- c. Install bracing into part to specification - by hand on lamination floor.
- d. Apply laminates over bracing to specification - by hand and gun on lamination floor.
- e. Pull part from mold - with hoists in pulling area.
- f. Clean grind part - by machine outside.
- g. Part is ready for engineering construction.

### Step 4 Assembly of Proto-Type

- a. Fiberglass parts are delivered to assembly groups for completion of proto-type. Documentation is prepared, then the molds, proto-type boat and documentation is released to manufacturing plant designated to build.



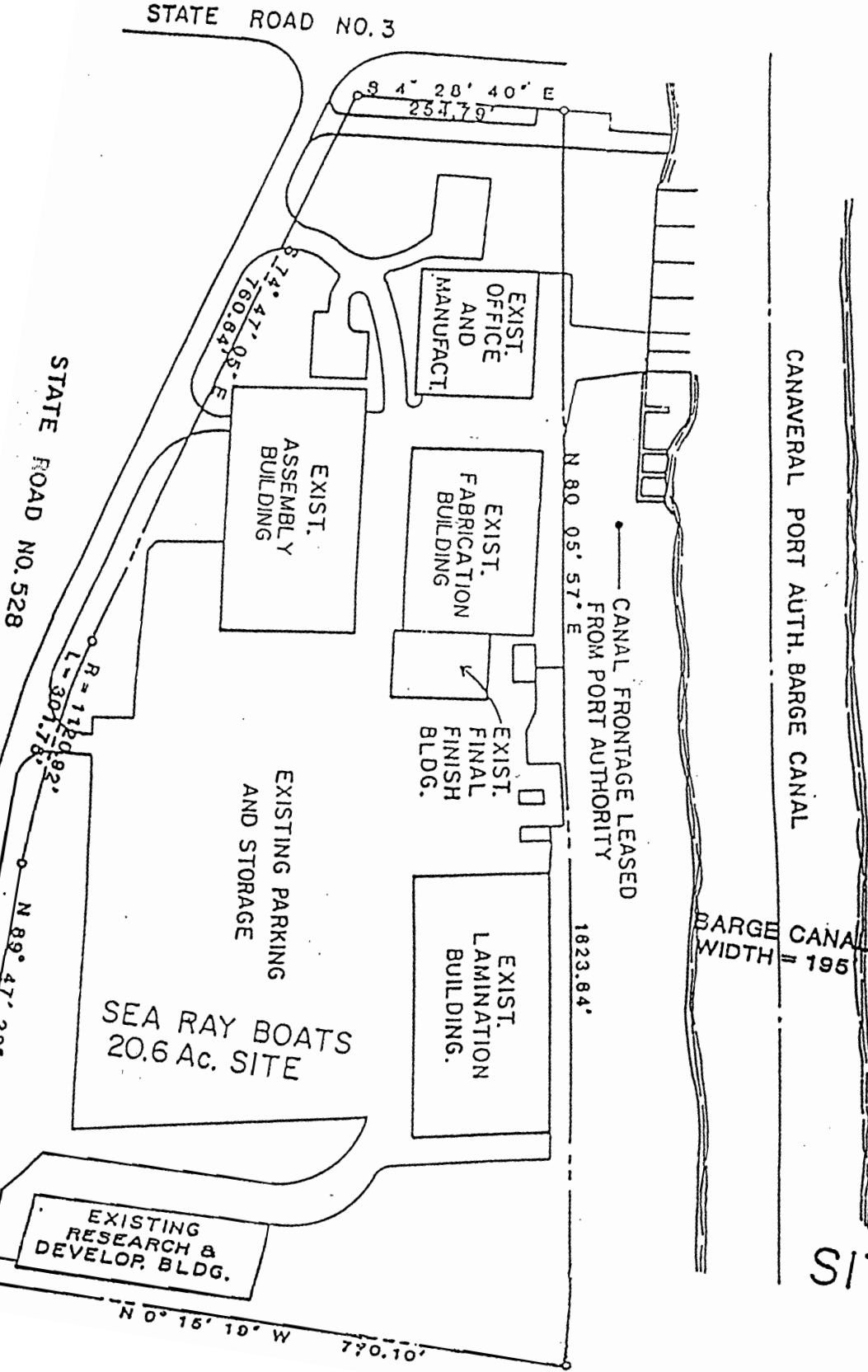
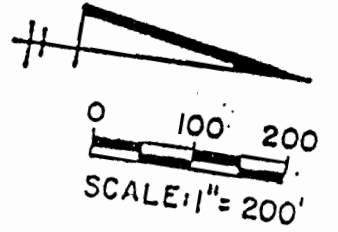


ADJACENT PROPERTY OWNERS  
 ) CANAVERAL PORT AUTHORITY  
 P.O. BOX 267  
 CAPE CANAVERAL, FLA.  
 32920  
 TINGLY'S FISH CAMP  
 STATE ROAD 3  
 MERRITT ISLAND, FLA.  
 32952

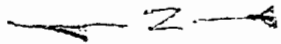
VICINITY MAP

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EXHIBIT "D"



SITE PLAN



A/C UNIT  
1,200 CFM

RESIN  
BLO

\* SPRAY BOOTH  
WITH ALL FANS (2)  
DOWNDRAFT  
41,200 CFM  
610 CFM AIR FLOW

\* 20" EXHAUST FANS  
19,025 CFM EACH

20" EXHAUST FANS  
19,025 CFM EACH

\* AIR HANDLER  
HU-1  
38,000 CFM

TRAMP A/C UNITS  
6800 CFM EACH

TRAMP A/C  
1200 CFM

\* TRAMP A/C  
1,200 CFM

TRAMP A/C  
3400 CFM

TRAMP A/C  
4,000 CFM

AIR  
HANDLER  
HU-2  
35,000 CFM

\* 20" EXHAUST FANS  
19,025 CFM EACH



SEA RAY®  
PRODUCT DEVELOPMENT  
AND ENGINEERING

TITLE AIR HANDLING EQUIPMENT	
MODEL	DRAWN BY
DATE	CHECKED BY
SCALE	APPROVED BY