PLAINTIFF'S EXHIBIT

ASA-555

OCTOBER 29, 1982

INSULAG-AF

9.

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: QUIGLEY COMPANY, INC.	EMERGENCY TELEPHONE NO.: (212) 573-3444
ADDRESS (Number, Street, City, State, and ZIP Code): 235 E. 42nd STREET, NEW YORK, NY 10017	
CHEMICAL NAME AND SYNONYMS: N/A	TRADE NAME AND SYNONYMS: INSULAG-AF
CHEMICAL FAMILY: NON-TOXIC SILICATES	FORMULA: NA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
NOT APPLICABLE		

SECTION III - PHYSICAL DATA

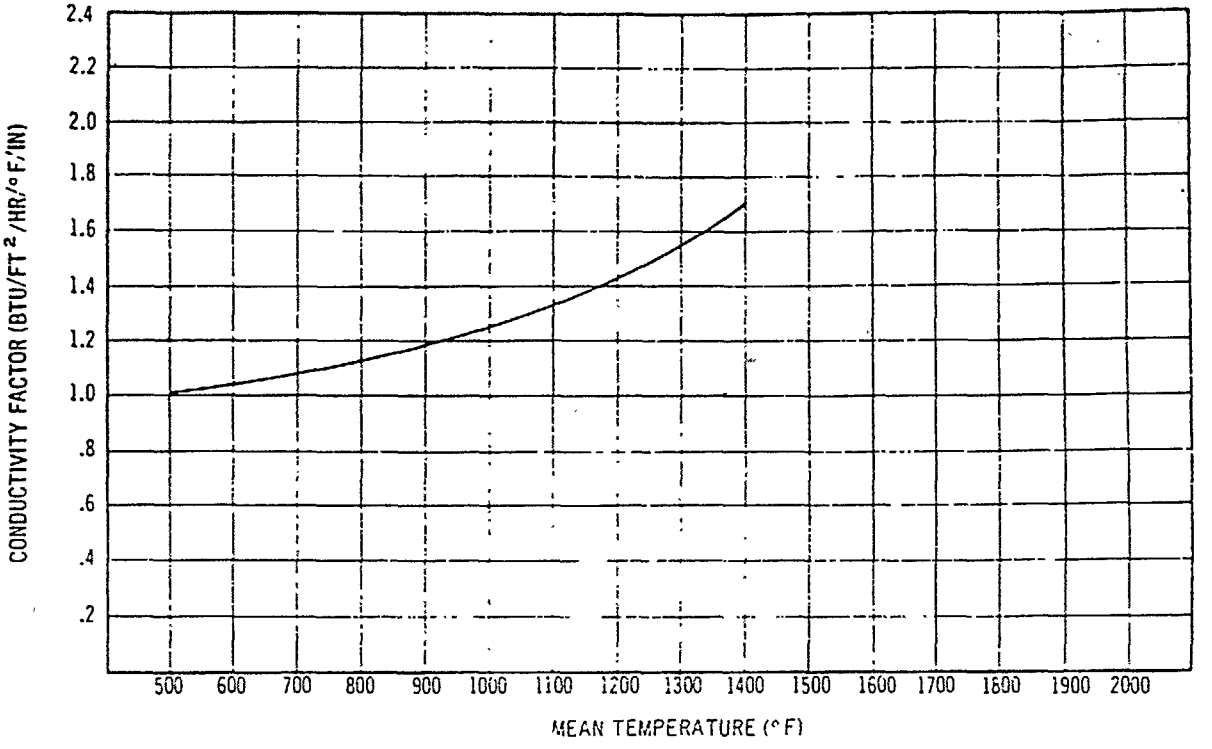
BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H_2O=1)	0.67
VAPOR PRESSURE (mm Hg.)	NA	PERCENT, VOLATILE BY VOLUME (%)	NA
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (_____ =1)	NA
SOLUBILITY IN WATER	NIL		
APPEARANCE AND ODOR	DRY GRANULAR MIX - NO ODOR		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	Lel.	Uel
EXTINGUISHING MEDIA	NOT COMBUSTIBLE	NA		
SPECIAL FIRE FIGHTING PROCEDURES	NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

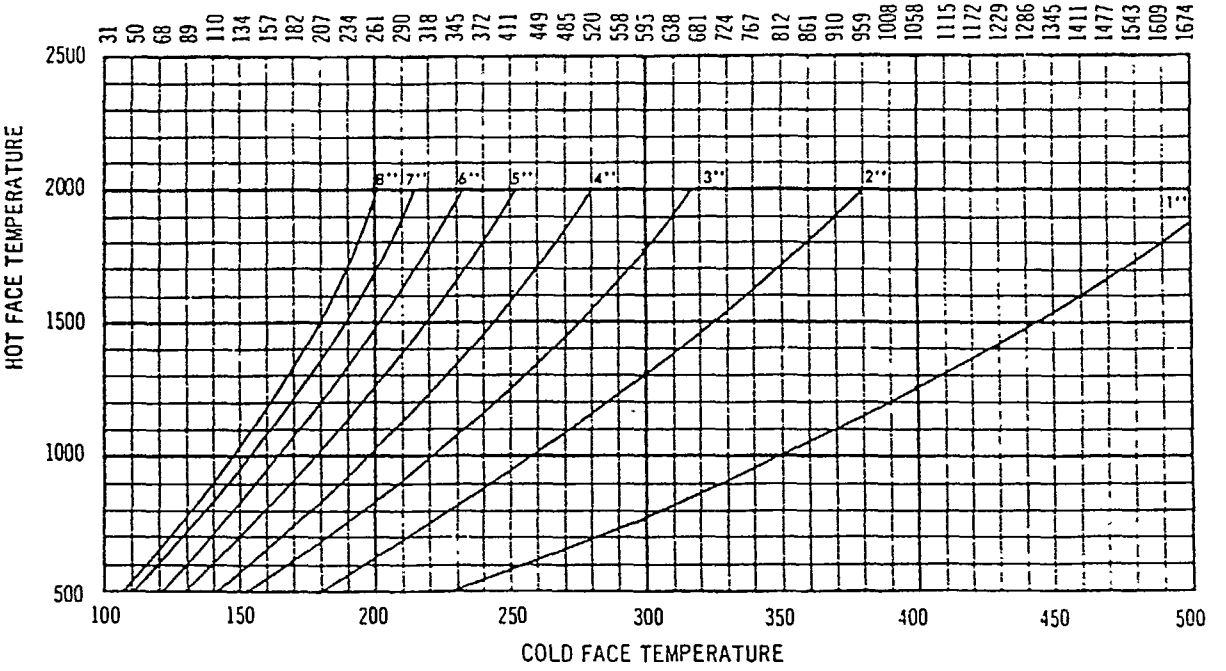
(Continued on reverse side)

THERMAL CONDUCTIVITY - INSULAG AF (Cast)



* PERFORMANCE GRAPH - INSULAG A.F.

BTU LOSS (Ft^2/Hr)



*THESE CURVES ARE BASED ON STILL AIR, 80°F AMBIENT TEMP AND EMISSIVITY FACTOR OF 0.9

TECHNICAL DATA

CASTABLES

INSULAG™ AF

Description: **INSULAG AF** is a Lightweight CASTABLE, combining Excellent Insulating Properties with a unique "bloating" feature (material expands prior to air set) which proves advantageous when filling inexcessible void areas. **INSULAG AF** is used as a multi-purpose product in both the ferrous and non-ferrous related industries.

Service Limit: 2000°F

P.C.E. Value: Cone 7 (2307°F)

ASTM Class: No Designation

Packaging: 50 lb. bags

Chemical Analysis:

Typical	
Al_2O_3	25.5 %
SiO_2	47.3
CaO	22.3
Fe_2O_3	0.8
TiO_2	0.6
MgO	0.7
Alkalies	1.0
L.O.I.	1.8

Thermal Conductivity:

Typical	
Mean Temp	'K'*
500°F	1.05
1000°F	1.28
1400°F	1.71

CAST

*(BTU/FT²/HR/°F/IN)

Typical Physical Properties: (as determined on CAST specimens, ASTM methods where applicable)

Fired to (°F)	Density (Lbs./Cu. Ft.)	Linear Change, (%)	Modulus of Rupture, (psi)	Cold Crushing Strength, (psi)
	CAST	CAST	CAST	CAST
230	38-46	0.0	32-55	56-105
1000	38-44	−0.2 to −0.3	22-52	33-62
1700	36-44	−2.1 to −3.2	9-31	25-43
2000	37-43	−2.0 to −3.1	11-29	23-42

Application Methods:

- Material required to CAST 1 cubic ft. is 36-44 lbs.
- Water required to cast 100 lbs. is 6-7 gals.
- Casting procedures are recommended in Brochure No. QS 102

QUIGLEY COMPANY INC.
a subsidiary of Pfizer Inc
235 EAST 42nd STREET NEW YORK N Y 10017

SECTION V · HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
5 mg/m3 Respirable - 15 mg/m3 Total Dust. NUISANCE DUST - AVOID INHALATION

EFFECTS OF OVEREXPOSURE
May cause eye and skin irritation to those with sensitive skin, and/or irritation in respiratory tract.

EMERGENCY AND FIRST AID PROCEDURES
Wash dust from skin with soap and water. Flush out eyes with generous amounts of water. If irritation persists, get medical attention.

SECTION VI · REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	NONE
INCOMPATABILITY *(Materials to avoid)*			NONE
HAZARDOUS DECOMPOSITION PRODUCTS			NONE
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	NONE

SECTION VII · SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Normal clean-up procedures. Care should be taken to avoid causing dust to become airborne. Vacuum cleaning systems are recommended.

WASTE DISPOSAL METHOD
Disposal must be made in accordance with Federal, State, and Local regulations.

SECTION VIII · SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*
Use of Dust Respirator is recommended when exposure limits may be exceeded.

VENTILATION	LOCAL EXHAUST Local exhaust ventilation to collector	SPECIAL or containment recommended
	MECHANICAL *(General)* to control dust to below exposure limits.	OTHER

PROTECTIVE GLOVES Leather or Rubber Gloves	EYE PROTECTION Dust-tight goggles in dusty environment.

OTHER PROTECTIVE EQUIPMENT

SECTION IX · SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Good industrial hygiene practice requires that empolyee exposure be maintained below the recommended TLV. This is preferably achieved through the provision

OTHER PRECAUTIONS
of adequate ventilation where necessary. Where dust cannot be controlled in this way, personal respiratory protection should be employed.

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts.

Prepared by: M. C. Larson, Manager, Safety & Environmental Health - OCTOBER 29, 1982