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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

CHEMICAL NAME AND SYNONYMS	Direct Blue 1	TRADE NAME AND SYNONYMS	DIRECT BRILLIANT BLUE FF
CHEMICAL FAMILY	DIAZO	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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H ₂ O=1)	NA
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	<2% AS WA
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (— = 1)	
SOLUBILITY IN WATER	<10%		
APPEARANCE AND ODOR	DARK BLUE POWDER		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	WATER - CARBON DIOXIDE - DRY CHEMICAL			
SPECIAL FIRE FIGHTING PROCEDURES				
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			
	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	UNKNOWN
EFFECTS OF OVEREXPOSURE	
EMERGENCY AND FIRST AID PROCEDURES	NON IRRITANT- NON SENSITIZER
	SKIN CONTACT--WASH WITH SOAP & WATER
	EYE CONTACT- FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES
	GET MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
	SWEEP UP PROMPTLY
	WEAR AN APPROVED RESPIRATOR
WASTE DISPOSAL METHOD	
	NORMAL PLANT WASTE--- BURRY OR INCINERATE

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)	APPROVED DUST RESPIRATOR		
VENTILATION	LOCAL EXHAUST		SPECIAL
	MECHANICAL (General)	ACCEPTABLE	OTHER
PROTECTIVE GLOVES		EYE PROTECTION	
OTHER PROTECTIVE EQUIPMENT			

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
	AVOID UNNECESSARY PERSONAL CONTACT
OTHER PRECAUTIONS	

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SECTION I

CHEMICAL NAME AND SYNONYMS DISP. YELLOW 3	TRADE NAME AND SYNONYM ACETATE YELLOW G
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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

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

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	FOAM OR CARBON DIOXIDE OR DRY CHEMICALS OR WATER			
SPECIAL FIRE FIGHTING PROCEDURES				
UNUSUAL FIRE AND EXPLOSION HAZARDS	AIR PAC RECOMMENDED TO AVOID BREATHING FUMES			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	UNKNOWN
EFFECTS OF OVEREXPOSURE	LOCAL SKIN IRRITATION & POSSIBLE DERMATITIS
EMERGENCY AND FIRST AID PROCEDURES	REMOVE PATIENT FROM AFFECTED AREA. FLUSH WITH WATER. WASH WELL WITH MILD SOAP. REFER TO A DOCTOR

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
HAZARDOUS DECOMPOSITION PRODUCTS			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	MECHANICALLY REMOVE POWDER RAISING AS LITTLE DUST AS POSSIBLE. AVOID SKIN CONTACT
WASTE DISPOSAL METHOD	SANITARY LAND FILL IN ACCORDANCE WITH LOCAL STATE & FEDERAL REGULATIONS

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)	WILSON 560 DUST RESPIRATOR	
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	RUBBER	EYE PROTECTION SAFETY GLASSES
OTHER PROTECTIVE EQUIPMENT	COVERALLS OR APRONS TO AVOID SKIN CONTACT	

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
OTHER PRECAUTIONS	AVOID FIRE OR OPEN FLAME DO NOT TAKE INTERNALLY. AVOID SKIN CONTACT.

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SECTION I

CHEMICAL NAME AND SYNONYMS DIRECT YELLOW 11	TRADE NAME AND SYNONYMS DIRECT YELLOW G SUPRA
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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

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

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NONE	FLAMMABLE LIMITS	LeI	UeI
EXTINGUISHING MEDIA	CARBON DIOXIDE OR DRY CHEMICAL FOR SMALL FIRES- FOAM			
SPECIAL FIRE FIGHTING PROCEDURES	NONE	FOR LARGE FIRES		
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	NOT ESTABLISHED
EFFECTS OF OVEREXPOSURE	
EMERGENCY AND FIRST AID PROCEDURES	SKIN CONTACT-WASH WITH SOAP & WATER
	EYE CONTACT-FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES
	GET MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE	X
INCOMPATIBILITY (Materials to avoid)		
HAZARDOUS DECOMPOSITION PRODUCTS		
HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR	X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
WASTE DISPOSAL METHOD

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)	DUST RESPIRATOR SUGGESTED	
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	ACCEPTABLE
OTHER		
PROTECTIVE GLOVES	PLASTIC	EYE PROTECTION
		SAFETY GLASSES
OTHER PROTECTIVE EQUIPMENT	SAFETY SHOWER & EYE BATH	

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
HANDLE WITH DUE CARE. AVOID UNNECESSARY PERSON CONTACT
OTHER PRECAUTIONS

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SECTION I

CHEMICAL NAME AND SYNONYMS ACID RED 87	TRADE NAME AND SYNONYMS ACID EOSINE
CHEMICAL FAMILY XANTHATE	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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N-A	SPECIFIC GRAVITY (H ₂ O=1)	N-A
VAPOR PRESSURE (mm Hg.)	N-A	PERCENT VOLATILE BY VOLUME (%)	N-A
VAPOR DENSITY (AIR=1)	N-A	EVAPORATION RATE (°C=20)	
SOLUBILITY IN WATER	WATER		
APPEARANCE AND ODOR	DARK RED POWDER		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NON-FLAMMABLE	FLAMMABLE LIMITS	LeL	UeL
EXTINGUISHING MEDIA				
SPECIAL FIRE FIGHTING PROCEDURES	NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS	NONE			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	NOT KNOWN
EFFECTS OF OVEREXPOSURE	LOW TOXICITY
EMERGENCY AND FIRST AID PROCEDURES	IN CASE OF CONTACT IMMEDIATELY FLUSH WITH WATER CONSULT A PHYSICIAN

SECTION VI - REACTIVITY DATA

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

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	SWEEP UP & DISPOSE IN LANDFILL AS PER LOCAL & STATE GOVERNMENTAL REGULATIONS
WASTE DISPOSAL METHOD	FLUSH AREA WITH WATER

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)	U.S. BUREAU OF MINES MASK FOR NUISANCE DUSTS	
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	RUBBER OR NEOPRENE	EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT	NONE	GOGGLES

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	STORE IN A DRY PLACE
OTHER PRECAUTIONS	NONE

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SECTION I

CHEMICAL NAME AND SYNONYMS ACID BLUE 25	TRADE NAME AND SYNONYMS ACID BLUE GRN
CHEMICAL FAMILY ANTHRAQUINONE	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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

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

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA	DRY CHEMICALS-CARBON DIOXIDE-WATER			
SPECIAL FIRE FIGHTING PROCEDURES	NONE			
UNUSUAL FIRE AND EXPLOSION HAZARDS				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	NOT DETERMINED
EFFECTS OF OVEREXPOSURE	
	UNKNOWN
EMERGENCY AND FIRST AID PROCEDURES	SKIN CONTACT-WASH WITH SOAP & WATER
	EYE CONTACT-FLUSH EYES WITH WATER FOR 15 MINUTES
	GET MEDICAL ATTENTION

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE X	
INCOMPATIBILITY (Materials to avoid)		
HAZARDOUS DECOMPOSITION PRODUCTS		
HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR	X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	SWEEP UP PROMPTLY
	WEAR AN APPROVED RESPIRATOR
WASTE DISPOSAL METHOD	NORMAL PLANT WASTE-BURY OR INCINERATE

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
APPROVED DUST RESPIRATOR		
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	ACCEPTABLE OTHER
PROTECTIVE GLOVES	EYE PROTECTION	
OTHER PROTECTIVE EQUIPMENT		

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	HANDLE WITH DUE CARE.
	AVOID UNNECESSARY PERSONAL CONTACT
OTHER PRECAUTIONS	

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SECTION I

CHEMICAL NAME AND SYNONYMS ACID VIOLET 49	TRADE NAME AND SYNONYMS ACID VIOLET 3B
CHEMICAL FAMILY TRI-PHENYL METHANE	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			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	NA	SPECIFIC GRAVITY (H ₂ O=1)	> 1
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	< 3% AS WA
VAPOR DENSITY (AIR=1)	NA	EVAPORATION RATE (1 = 100%)	NA
SOLUBILITY IN WATER	MODERATELY		
APPEARANCE AND ODOR	DEEP VIOLET POWDER		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	NA	FLAMMABLE LIMITS	NA	LeI	UeI
EXTINGUISHING MEDIA	DRY CHEMICAL CARBON DIOXIDE WATER				
SPECIAL FIRE FIGHTING PROCEDURES					
UNUSUAL FIRE AND EXPLOSION HAZARDS					

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	NOT DETERMINED
EFFECTS OF OVEREXPOSURE	UNKNOWN
EMERGENCY AND FIRST AID PROCEDURES	SKIN CONTACT-WASH WITH SOAP & WATER EYE CONTACT-FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES GET MEDICAL AID

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE	CONDITIONS TO AVOID
	STABLE	XX
INCOMPATIBILITY (Materials to avoid)	STRONG OXIDIZING OR REDUCING AGENTS	
HAZARDOUS DECOMPOSITION PRODUCTS	UNKNOWN	
HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR	X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	SWEEP UP PROMPTLY
	WEAR AN APPROVED RESPIRATOR
WASTE DISPOSAL METHOD	
	NORMAL PLANT WASTE -- BURY OR INCINERATE

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)	APPROVED DUST RESPIRATOR	
VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	ACCEPTABLE
PROTECTIVE GLOVES	PLASTIC	EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT	SAFETY SHOWER & EYE BATH	
	SAFETY GLASSES	

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
OTHER PRECAUTIONS	HANDLE WITH CARE AVOID UNNECESSARY PERSONAL CONTACT