

MATERIAL SAFETY DATA SHEET

No. 1

IDENTITY (AS USED ON LABELS LIST)		FILE NO.	
JOY BLACK LHF-10			
SECTION I			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
Mikuni Color Ltd.		0792-52-0783	
ADDRESS		TEL NO. 0792-52-0783	
138-1, Kokubunji, Mikunino-cho		DATA PREPARED Nov. 12, 2004	
Himeji, Japan			
SECTION II -HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY, COMMON NAME)			
Common Name	CAS No.	%	ACGIH:TLV-
Ethylene Glycol	107-21-1	10~20	(STEL) 100mg/m ³ (Ceiling)
Triethanolamine	102-71-6	Below 5	(TWA) 5mg/m ³
Carbon Black	1333-86-4	5~10	(TWA) 3.5mg/m ³
Glycerin	56-81-5	5~10	(TWA) 10mg/m ³ (Total dust)
Polyethylene Glycol	25322-68-3		N.E.
(Chemical Characterisation : aqueous Black pigment dispersion)			
SECTION III -PHYSICAL / CHEMICAL CHARACTERISTICS			
BOILING POINT	N.D.	SPECIFIC GRAVITY (H ₂ O= 1)	N.D.
VAPOR PRESSURE (Pa)	N.D.	MELTING POINT	N.D.
VAPOR DENSITY (AIR= 1)	N.D.	EVAPORATION RATE	N.D.
SOLUBILITY IN WATER			
Miscible			
APPEARANCE AND ODOR			
Black liquid, Slight odor			
SECTION IV -FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable		no data	no data
EXTINGUISHING MEDIA			
Water, Powder of NaHCO ₃ , CO ₂ foam			
SPECIAL FIRE FIGHTING PROCEDURE			
There is no danger of occurring fire and explosion.			
UNUSUAL FIRE AND EXPLOSION HAZAEDS			
None			
*N.D.= NOT DETERMINED , N.E.= NOT ESTABLISHED			

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MATERIAL SAFETY DATA SHEET

No. 1

IDENTITY (AS USED ON LABELS LIST)		FILE NO.	
JOY BLACK LHF-30A			
SECTION I			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
Mikuni Color Ltd.		0792-52-0783	
ADDRESS		TEL NO. 0792-52-0783	
138-1, Kokubunji, Mikunino-cho		DATA PREPARED Nov. 12, 2004	
Himeji, Japan			
SECTION II -HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY, COMMON NAME)			
Common Name	CAS No.	%	ACGIH:TLV-
Ethylene Glycol	107-21-1	10~20	(STEL) 100mg/m ³ (Ceiling)
Triethanolamine	102-71-6	Below 5	(TWA) 5mg/m ³
Carbon Black	1333-86-4	5~10	(TWA) 3.5mg/m ³
Polyethylene Glycol	25322-68-3		N.E.
(Chemical Characterisation : aqueous Black pigment dispersion)			
SECTION III -PHYSICAL / CHEMICAL CHARACTERISTICS			
BOILING POINT	N.D.	SPECIFIC GRAVITY (H ₂ O= 1)	N.D.
VAPOR PRESSURE (Pa)	N.D.	MELTING POINT	N.D.
VAPOR DENSITY (AIR= 1)	N.D.	EVAPORATION RATE	N.D.
SOLUBILITY IN WATER			
Miscible			
APPEARANCE AND ODOR			
Black liquid, Slight odor			
SECTION IV -FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable		no data	no data
EXTINGUISHING MEDIA			
Water, Powder of NaHCO ₃ , CO ₂ foam			
SPECIAL FIRE FIGHTING PROCEDURE			
There is no danger of occurring fire and explosion.			
UNUSUAL FIRE AND EXPLOSION HAZARDS			
None			
*N.D.= NOT DETERMINED , N.E.= NOT ESTABLISHED			

SECTION VIII -CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE)

VENTILATION	LOCAL EXHAUST	SPECIAL
	Need	
	MECHANICAL (GENERAL)	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
Rabber Gloves ,etc..	Safety Glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Rubber Boots

WORK / HYGIENIC PRACTICES

Wash gloves and boots before removing.

Wash face and hand before eating, drinking or smoking.

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation.

The information contained herein is based on the present state of our knowledge and intended to describe our products from the point of view of health and safety requirements.

It should not, therefore, be construed as guaranteeing specific properties.

MATERIAL SAFETY DATA SHEET

No. 1

IDENTITY (AS USED ON LABELS LIST)		FILE NO.	
JOY BLUE LHF-21			
SECTION I			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
Mikuni Color Ltd.		0792-52-0783	
ADDRESS		TEL NO. 0792-52-0783	
138-1, Kokubunji, Mikunino-cho		DATA PREPARED May 1, 2003	
Himeji, Japan			
SECTION II -HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY, COMMON NAME)			
Common Name	CAS No.	%	ACGIH:TLV-
Ethylene Glycol	107-21-1	20~30	(STEL) 100mg/m ³ (Ceiling)
Glycerin	56-81-5	10~20	(TWA) 10mg/m ³ (Total dust)
Triethanolamine	102-71-6	Below 1	(TWA) 5mg/m ³
(Chemical Characterisation : aqueous Blue pigment dispersion)			
SECTION III -PHYSICAL / CHEMICAL CHARACTERISTICS			
BOILING POINT	About 100°C	SPECIFIC GRAVITY (H ₂ O= 1)	N.D.
VAPOR PRESSURE (Pa)	N.D.	MELTING POINT	N.D.
VAPOR DENSITY (AIR= 1)	N.D.	EVAPORATION RATE	N.D.
SOLUBILITY IN WATER			
Miscible			
APPEARANCE AND ODOR			
Blue liquid, Slight odor			
SECTION IV -FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable		no data	no data
EXTINGUISHING MEDIA			
Water, Powder of NaHCO ₃ , CO ₂ foam			
SPECIAL FIRE FIGHTING PROCEDURE			
There is no danger of occurring fire and explosion.			
UNUSUAL FIRE AND EXPLOSION HAZAEDS			
None			
*N.D.= NOT DETERMINED			

SECTION V -REACTIVITY DATA			
STABILITY			
UNSTABLE		CONDITIONS TO AVOID	
STABLE	O		
INCOMPATIBILITY (MATERIALS TO AVOID)			
Nothing			
HAZARDOUS DECOMPOSITION OR BYPRODUCTS			
Nothing			
HAZARDOUS POLYMERIZATION			
MAY OCCUR		CONDITIONS TO AVOID	
WILL NOT OCCUR	O		
SECTION VI -HEALTH HAZARD DATA			
ROUTE(S) OF ENTRY:	INHALATION?	SKIN?	INGESTION?
	Yes	Yes	Yes
HEALTH HAZARDS (ACUTE AND CHRONIC)			
The acute oral LD50 in rat : Ethylene Glycol=4700mg/kg, Triethanolamine=4920 μ l/kg.			
CARCINOGENICITY			
NTP?	IARC MONOGRAPHS?	OSHA REGULATED?	
No	No	No	
SIGNS AND SYMPTOMS OF EXPOSURE			
MEDICAL CONDITIONS / GENERALLY AGGRAVATED BY EXPOSURE			
EMERGENCY AND FIRST AID PROCEDURES			
Eye Contact : Rinse away thoroughly with water. Call physician. Ingestion : Dilute with water and induce vomiting. Call physician.			
SECTION VII -PRECAUTIONS FOR SAFE HANDLING AND USE			
STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED			
Wipe up and place in a closable container for disposal.			
WASTE DISPOSAL METHOD			
Dispose in accordance with the federal, state and local regulations. Do not discharge into waterways or sewer system.			
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING			
Store below 40°C and above 0°C without exposure to direct sunlight.			
OTHER PRECAUTIONS			
For industrial use only.			

SECTION VIII -CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE)

VENTILATION	LOCAL EXHAUST	SPECIAL
	Need	
	MECHANICAL (GENERAL)	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
Rabber Gloves ,etc..	Safety Glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Rubber Boots

WORK / HYGIENIC PRACTICES

Wash gloves and boots before removing.

Wash face and hand before eating, drinking or smoking.

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation.

The information contained herein is based on the present state of our knowledge and intended to describe our products from the point of view of health and safety requirements.

It should not, therefore, be construed as guaranteeing specific properties.

MATERIAL SAFETY DATA SHEET

No. 1

IDENTITY (AS USED ON LABELS LIST)		FILE NO.	
JOY VIOLET LHF-22(#8)			
SECTION I			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
Mikuni Color Ltd.		0792-52-0783	
ADDRESS		TEL NO. 0792-52-0783	
138-1, Kokubunji, Mikunino-cho		DATA PREPARED Aug. 5, 2004	
Himeji, Japan			
SECTION II -HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY, COMMON NAME)			
Common Name	CAS No.	%	ACGIH:TLV-
Ethylene Glycol	107-21-1	10~20	(STEL) 100mg/m ³ (Ceiling)
Polyethylene Glycol	25322-68-3		N.E.
(Chemical Characterisation : aqueous Violet pigment dispersion)			
SECTION III -PHYSICAL / CHEMICAL CHARACTERISTICS			
BOILING POINT	N.D.	SPECIFIC GRAVITY (H ₂ O= 1)	N.D.
VAPOR PRESSURE (Pa)	N.D.	MELTING POINT	N.D.
VAPOR DENSITY (AIR= 1)	N.D.	EVAPORATION RATE	N.D.
SOLUBILITY IN WATER			
Miscible			
APPEARANCE AND ODOR			
Violet liquid, Slight odor			
SECTION IV -FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable		no data	no data
EXTINGUISHING MEDIA			
Water, Powder of NaHCO ₃ , CO ₂ foam			
SPECIAL FIRE FIGHTING PROCEDURE			
There is no danger of occurring fire and explosion.			
UNUSUAL FIRE AND EXPLOSION HAZAEDS			
None			
*N.D.= NOT DETERMINED , N.E.= NOT ESTABLISHED			

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SECTION V -REACTIVITY DATA**STABILITY**

UNSTABLE		CONDITIONS TO AVOID
STABLE	○	

INCOMPATIBILITY (MATERIALS TO AVOID)

No specific information is available.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

No specific information is available.

HAZARDOUS POLYMERIZATION

MAY OCCUR		CONDITIONS TO AVOID
WILL NOT OCCUR	○	

SECTION VI -HEALTH HAZARD DATA

ROUTE(S) OF ENTRY:	INHALATION?	SKIN?	INGESTION?
	Yes	Yes	Yes

HEALTH HAZARDS (ACUTE AND CHRONIC)

The acute oral LD50 in rat : Ethylene Glycol=4700mg/kg

CARCINOGENICITY	NTP?	IARC MONOGRAPHS?	OSHA REGULATED?
	No	No	No

SIGNS AND SYMPTOMS OF EXPOSURE**MEDICAL CONDITIONS / GENERALLY AGGRAVATED BY EXPOSURE**

EMERGENCY AND FIRST AID PROCEDURES Eye Contact : Rinse away thoroughly with water.
 Call physician. Ingestion : Dilute with water and induce vomiting. Call physician.

SECTION VII -PRECAUTIONS FOR SAFE HANDLING AND USE**STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Wipe up and place in a closable container for disposal.

WASTE DISPOSAL METHOD Dispose in accordance with the federal, state and local regulations.
 Do not discharge into waterways or sewer system.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store below 40°C and above 0°C without exposure to direct sunlight.

OTHER PRECAUTIONS

For industrial use only.

No. 3

SECTION VIII -CONTROL MEASURES**RESPIRATORY PROTECTION (SPECIFY TYPE)**

VENTILATION	LOCAL EXHAUST	SPECIAL
	Need	
	MECHANICAL (GENERAL)	OTHER

PROTECTIVE GLOVES

Rubber Gloves ,etc..

EYE PROTECTION

Safety Glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Rubber Boots

WORK / HYGIENIC PRACTICES

Wash gloves and boots before removing.

Wash face and hand before eating, drinking or smoking.

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation.

The information contained herein is based on the present state of our knowledge and intended to describe our products from the point of view of health and safety requirements.

It should not, therefore, be construed as guaranteeing specific properties.

MATERIAL SAFETY DATA SHEET

No. 1

IDENTITY (AS USED ON LABELS LIST)		FILE NO.	
JOY GREEN LHF-23			
SECTION I			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
Mikuni Color Ltd.		0792-52-0783	
ADDRESS		TEL NO. 0792-52-0783	
138-1, Kokubunji, Mikunino-cho		DATA PREPARED Apr. 27, 2004	
Himeji, Japan			
SECTION II -HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY, COMMON NAME)			
Common Name	CAS No.	%	ACGIH:TLV-
Ethylene Glycol	107-21-1	10~20	(STEL) 100mg/m ³ (Ceiling)
Polyethylene Glycol	25322-68-3		N.E.
(Chemical Characterisation : aqueous Green pigment dispersion)			
SECTION III -PHYSICAL / CHEMICAL CHARACTERISTICS			
BOILING POINT	N.D.	SPECIFIC GRAVITY (H ₂ O= 1)	N.D.
VAPOR PRESSURE (Pa)	N.D.	MELTING POINT	N.D.
VAPOR DENSITY (AIR= 1)	N.D.	EVAPORATION RATE	N.D.
SOLUBILITY IN WATER			
Miscible			
APPEARANCE AND ODOR			
Green liquid, Slight odor			
SECTION IV -FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
Not applicable		no data	no data
EXTINGUISHING MEDIA			
Water, Powder of NaHCO ₃ , CO ₂ foam			
SPECIAL FIRE FIGHTING PROCEDURE			
There is no danger of occurring fire and explosion.			
UNUSUAL FIRE AND EXPLOSION HAZAEDS			
None			
*N.D.= NOT DETERMINED , N.E.= NOT ESTABLISHED			

SECTION V - REACTIVITY DATA

STABILITY

UNSTABLE		CONDITIONS TO AVOID
STABLE	○	

INCOMPATIBILITY (MATERIALS TO AVOID)

No specific information is available.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

No specific information is available.

HAZARDOUS POLYMERIZATION

MAY OCCUR		CONDITIONS TO AVOID
WILL NOT OCCUR	○	

SECTION VI -HEALTH HAZARD DATA

ROUTE(S) OF ENTRY:	INHALATION?	SKIN?	INGESTION?
	Yes	Yes	Yes

HEALTH HAZARDS (ACUTE AND CHRONIC)

The acute oral LD50 in rat : Ethylene Glycol=4700mg/kg

CARCINOGENICITY	NTP?	IARC MONOGRAPHS?	OSHA REGULATED?
	No	No	No

SIGNS AND SYMPTOMS OF EXPOSURE

MEDICAL CONDITIONS / GENERALLY AGGRAVATED BY EXPOSURE

EMERGENCY AND FIRST AID PROCEDURES

Eye Contact : Rinse away thoroughly with water.

Call physician. Ingestion : Dilute with water and induce vomiting. Call physician.

SECTION VII -PRECAUTIONS FOR SAFE HANDLING AND USE

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wipe up and place in a closable container for disposal.

WASTE DISPOSAL METHOD

Dispose in accordance with the federal, state and local regulations.

Do not discharge into waterways or sewer system.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store below 40°C and above 0°C without exposure to direct sunlight.

OTHER PRECAUTIONS

For industrial use only.

No. 3

SECTION VII -CONTROL MEASURES**RESPIRATORY PROTECTION (SPECIFY TYPE)**

VENTILATION	LOCAL EXHAUST	SPECIAL
	Need	
	MECHANICAL (GENERAL)	OTHER

PROTECTIVE GLOVES

Rubber Gloves ,etc..

EYE PROTECTION

Safety Glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Rubber Boots

WORK / HYGIENIC PRACTICES

Wash gloves and boots before removing.

Wash face and hand before eating, drinking or smoking.

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation.

The information contained herein is based on the present state of our knowledge and intended to describe our products from the point of view of health and safety requirements.

It should not, therefore, be construed as guaranteeing specific properties.