

MATERIAL SAFETY DATA SHEET

In compliance with U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 29 CFR 1910.1200

perfectIM[®]
SYSTEMS

Product Identity (as used on label): **PERFECTIM[®] Peel-Away Die Spacer System: Die Lubricant** (clear liquid)

SECTION I: IDENTIFICATION

J. Morita, USA, Inc.
9 Mission, Irvine, CA 92618
Telephone number for information:
1-888-1-MORITA
1-888-566-7462

Emergency Phone Number 24-hour contact within the United States:
CHEMTREC 1-800-424-9300
24-hour contact outside the United States: 703-527-3887
Date Prepared 03/01/2000
Common names and synonyms Lubricant, stone die lube, coat

SECTION II: HAZARDOUS MATERIALS / IDENTITY INFORMATION

<u>Chemical & Common Names</u>	<u>CAS No.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other Limits</u>	<u>1</u>
Hazardous ingredients					
Isopropanol	67-63-0	400 ppm	400 ppm	None	N.A.*
1,2,3 Propanetriol with Methyl Oxirane	25791-96-2	N.A.*	N.A.*	None	Not available
Non-hazardous ingredients					
Proprietary		N.A.*	N.A.*		

DOT Hazard Class Class 3 Flammable liquid, nos. (contains isopropanol), UN1993
ORM-D consumer commodity

* N.A. designates not applicable

Hazard Rating Key: 0=Minimal 1=slight 2=moderate 3=serious 4=extreme

NFPA INFORMATION

HEALTH	FLZ	REACTIVITY
1	2	1

SECTION III: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point (°F)	181° F
Vapor Pressure (mm Hg)	Not established
Vapor Density (Air=1)	Not established
Solubility in H ₂ O	Insoluble
Appearance/Odor	Clear liquid Sweet, aromatic smell.
Specific Gravity (H ₂ O=1)	0.9
Melting Point	Not applicable.
Evaporation Rate (butyl acetate = 1)	Not established.

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	68 F, open cup
Flammable Limits in Air (% by volume)	
LEL	2.0
UEL	12.7 @ 200° F
Extinguishing Media	Use water spray, carbon dioxide, dry chemical, alcohol type or universal type foams applied by manual forces, recommended techniques.
Special Fire Fighting Procedures	Use self-contained breathing apparatus and protective clothing. For small burn: smother with water, or a wet blanket or towel.
Unusual Fire & Explosion Hazards	Vapors can travel to an ignition source, such as a burner burner or furnace, and flash back. Material can form explosive vapors with air.

SECTION V: REACTIVITY DATA

Chemical Stability	Stable
Conditions to Avoid	Keep away from heat or open flame.
Incompatibility (materials to avoid)	Avoid concentrated nitric and sulfuric acids, strong oxidizers, alkalis and halogen compounds.
Hazardous Decomposition/By products	Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide.
Hazardous Polymerization	Will not occur.

MATERIAL SAFETY DATA SHEET

Product Identity (as used on label) **PERFECTIM[®] Peel-Away Die Spacer System: Die Lubricant** (clear liquid)

SECTION VI: HEALTH HAZARD DATA

Routes of Entry	Inhalation ² : Yes Skin ² : Yes Ingestion ² : Yes
Health Hazards (Acute and Chronic) ¹	Irritant to skin and eyes. Repeated contact may cause dermatitis, cracking of skin, and dermatitis. Mild irritant to nose and throat. Concentrations above TLV may result in headache and drowsiness. References do not report ill health as a result of chronic overexposure.
Contingency Signs and Symptoms of Exposure	NIOSH: No IARC Monographs ² : No OSHA Regulated ² : No Ingestion: Slightly toxic. Ingestion of large quantity may cause drowsiness and loss of consciousness. Stomach cramps, pain, nausea, vomiting and diarrhea may also occur. Inhalation: Vapors can irritate nose, throat and lungs. Skin Contact: Prolonged or repeated contact can cause skin irritation. Chronic exposure may cause dermatitis type of dermatitis. Eye Contact: Direct contact can cause eye irritation and temporary damage.
Medical Conditions Aggravated By Exposure	Dermatitis or dry skin conditions. Refer to above. Other health hazards: none currently known.
Emergency and First Aid Procedures	Inhalation: Remove subject to fresh air. If not breathing, apply artificial respiration. Get medical attention. Skin Contact: Remove contaminated clothing and flush skin with water. Eye Contact: Immediately and thoroughly wash eyes with plenty of water. Get medical attention. Ingestion: Give two glasses of water and induce vomiting if significant quantity has been swallowed. Get medical attention promptly.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled	Remove all sources of ignition. For small spills, flush with large quantities of water. Larger spills should be collected for disposal. Caution: Floors may become slippery when wet. Use an absorbent material and dispose of according to applicable local, state, and Federal laws. Ventilate the area. Wet make serious slipping or falling hazard. Lay coarse sand over the spill. Keep out of water supplies.
Waste Disposal Method	For disposal, this is considered a hazardous substance. Be due, upon evaporation, is not hazardous and may be disposed of with ordinary trash.
Handling and Storage Precautions	Avoid inhalation of vapors. Work in a well-ventilated area. Store away from open flame and heat. Keep container tightly capped.
Other Precautions	Use according to directions. Wear latex gloves. Avoid spraying into face.

SECTION VIII: CONTROL MEASURES / SPECIAL PROTECTION INFORMATION

Respiratory Protection	None required. Use with adequate ventilation or work under exhaust hood.
Ventilation	Use local exhaust when vapors can escape to work area.
Protective Gloves	Latex is acceptable.
Eye Protection	Splash proof safety goggles.
Other Protective Equipment	Eyewash station.
Work/Hygiene Practices	Wash hands before and after use.

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MATERIAL SAFETY DATA SHEET

To comply with U.S. Department of Labor Occupational Safety and Health Administration (OSHA)
Hazard Communication Standard 29 CFR 1910.1200

perfectIM[®]
SYSTEMS

Product Identity (as used on label): **PERFECTIM[®] Peel-Away Die Spacer System: Die Spacer #1** (opaque blue colored liquid)

SECTION I: IDENTIFICATION

1. Morris, USA, Inc.
9 Alston, Irvine, CA 92618
Telephone number for information:
1-866-1-MORITA
(1-866-566-7482)

Emergency Phone Number: 24 hour contact within the United States:
CHEMTRAC 1-800-424-9300
24 hour contact outside the United States: 703-527-3887
Date Prepared: 03/01/2000
Common names and synonyms: Natural Latex Rubber

SECTION II: HAZARDOUS MATERIALS / IDENTITY INFORMATION

Chemical & Common Name(s)	CAS No.	OSHA PEL	ACGIH TLV	Other Limits	Σ
Hazardous ingredients					
Ammonium ions	1336-21-6	ppm 25	ppm None	< 35	N/A
Ammonium hydroxide					
Non-hazardous ingredients					
Natural latex solids	9006-24-6	N/A	N/A		
Water	7732-18-5				

[Caution: Causes eye, skin and respiratory irritation. Harmful if inhaled or swallowed.]

DOT Hazard Class: N/A Non-hazardous

* N/A,* designates not applicable

NFPA Hazard Rating		
HEALTH	FIRE	REACTIVITY
1	1	0

*Hazard Rating Key: 0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe

SECTION III: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point (°F)	212° F
Vapor Pressure, mm. Hg	28 @25C
Vapor Density (Air=1)	Same as water
Solubility in H2O	Miscible
Appearance/Odor	Slight blue, slight ammonia odor
Specific Gravity (H2O=1)	0.98
Melting Point	Not applicable
Evaporation Rate (water = 1)	1

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	Not Flammable
Flammable Limits in Air (% by volume)	
LEL	N/A
UEL	N/A
Extinguishing Media	Use water spray, carbon dioxide, or dry chemical for dried film
Special Fire Fighting Procedures	In a general fire, toxic fumes may be generated. Self-contained breathing apparatus should be used.
Unusual Fire & Explosion Hazards	Burning dry latex (rubber) causes dense black smoke with the potential for toxic vapors

SECTION V: REACTIVITY DATA

Chemical Stability	Stable
Conditions to Avoid	Avoid extreme temperatures, freezing or extreme heat. Freezing may cause material to set up. Keep container sealed to prevent dehydration and curing
Incompatibility (materials to avoid)	Avoid solvents, acids. Multivalent salts may coagulate the liquid rubber
Hazardous Decomposition/By products	Thermal decomposition may produce toxic gases
Hazardous Polymerization	Will not occur

MATERIAL SAFETY DATA SHEET

Product Identity (as used on label): **PERFECTIM[®] Peel-Away Die Spacer System; Die Spacer #1** (opaque blue colored liquid)

SECTION VI: HEALTH HAZARD DATA

Routes of Entry	Inhalation ² - Yes Skin ² - Yes Ingestion ² - Yes
Health Hazards (Acute and Chronic)	CAUTION: This product contains natural rubber latex which may cause allergic reactions. Irritant to nose, mouth, throat, and lungs. Irritant to skin and eyes. Do not get into eyes, on skin or on clothing. Avoid breathing vapors.
Carcinogenicity	NIHPP: No IARC Monographs ³ : No OSHA Regulated ⁴ : No
Signs and Symptoms of Exposure	Inhalation: Vapors can irritate nose, throat and lungs causing coughing and wheezing. Exposure can cause headache, loss of sense of smell, nausea, vomiting. Ingestion: Nausea and vomiting may result. Skin Contact: Direct contact can irritate or burn the skin. Natural rubber latex liquid is alkaline and can cause burns. Eye Contact: Contact can irritate and burn the eyes.
Medical Conditions Aggravated by Exposure	Persons allergic to latex or who have reactions to wearing latex gloves, should avoid direct contact.
Emergency and First Aid Procedures	Inhalation: Remove subject to fresh air and get medical attention. Skin Contact: Remove contaminated clothing and flush skin with water. Eye Contact: Immediately and thoroughly flush eyes with plenty of water. Get medical attention. Ingestion: Contact physician immediately for treatment instructions.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled	Contain spill to prevent contamination of sewer system or ground water. Absorb liquid with appropriate absorbent. Spills will cause slippery condition. If spill is on clothing or rug, wash with water (if possible) immediately, to prevent curing on fabric. Rinse several times with water to completely remove diluted liquid. Towel dry with absorbent paper towel. Dispose of properly.
Waste Disposal Method	Dispose of in accordance with local, state, and federal regulations regarding environmental control. Dried latex does not pose a waste contamination problem.
Handling and Storage Precautions	Avoid prolonged contact with skin. Wash skin immediately, before material sets. CAUTION: Persons allergic to latex or who have reactions to wearing latex gloves, should avoid direct contact. Avoid extreme temperatures. Keep from freezing during storage and shipping. Material could solidify in bottle if frozen. Keep containers sealed. Keep material out of direct sunlight.
Other Precautions	None normally required.

SECTION VIII: CONTROL MEASURES / SPECIAL PROTECTION INFORMATION

Respiratory Protection	Under moderate or high vapor concentrations, use mask supplied with external air or other self contained breathing apparatus.
Ventilation	Work in well ventilated area.
Protective Gloves	Vinyl or rubber gloves.
Eye Protection	Chemical or safety goggles.
Other Protective Equipment	Safety shower and eyewash station.
Work/Hygiene practices	Wash hands after use.

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MATERIAL SAFETY DATA SHEET

To comply with U.S. Department of Labor Occupational Safety and Health Administration (OSHA)
Hazard Communication Standard 29 CFR 1910.1200

perfectIM[®]
SYSTEMS

Product Identity (as used on label) **PERFECTIM[®] Peel-Away Die Spacer System: Die Spacer #2** (opaque red colored liquid)

SECTION I: IDENTIFICATION

J. Morita, USA, Inc. 9 Mason, Irvine, CA 92618 Telephone number for information: 1-888-1MORITA (1-888-566-7482)	Emergency Phone Number 24 hour contact within the United States CHEMIFREC 1-800-424-9300 24 hour contact outside the United States 703-527-3887
	Date Prepared 03/01/2000
	Common names and synonyms Die Spacer

SECTION II: HAZARDOUS MATERIALS / IDENTITY INFORMATION

<u>Chemical & Common Names</u>	<u>CAS No.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other Limits</u>	<u>D</u>
Hazardous ingredients					
Methyl Ethyl Ketone	78-93-3	200 ppm	200 ppm	N.A.*	> 50
n-Hexane	108-65-6	N.A.*	100 ppm	N.A.*	> 4
Aromatic 100*	64742-95-6	N.A.*	100 ppm	N.A.*	> 3
* component parts of Aromatic 100					
Xylene	1130-20-7	100 ppm	100 ppm	N.A.*	< 1
Tri-methylbenzene	25531-13-7	N.A.*	100 ppm	N.A.*	< 6
Pseudocumene	95-63-6	N.A.*	100 ppm	N.A.*	> 1

Non hazardous ingredients

Acrylic copolymers (proprietary), Pigments (organic red) [CAS No. 2785-76-7]
(Warning: Flammable liquid. Causes eye, skin and respiratory irritation. Harmful if inhaled or swallowed.)
DOT Hazard Class Class 3 Flammable liquid, not (contains ethyl methyl ketone)
UN# 993 ORM-D consumer commodity

* N.A. * designates not applicable

Hazard Rating Key: 0=Minimal 1=slight 2=moderate 3=serious 4=severe

NFPA Hazardous:

HEALTH	FLAME	REACTIVITY
2	3	0

SECTION III: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point (1" H ₂ O)	normal 80°C / 176°F
Vapor Pressure, mm. Hg	80 est. 20°C / 68°F
Vapor Density (Air=1)	> 1 (hexane)
Solubility in H ₂ O	Vehicle and solvent miscible. Pigment insoluble
Appearance/Color	Red. Azelaic acid
Specific Gravity (H ₂ O=1)	Approximately 1
Melting Point	-85°C / -123°F
Evaporation Rate (butyl acetate = 1)	> 1 (faster)

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	-4°C / 25°F S.F.C.C.
Flammable Limits in Air (% by volume):	Auto-ignition 516°C / 961°F
LEL	1 est.
UEL	12 est.
Extinguishing Media	*Alcohol foam*; CO ₂ , dry chemical, or water spray.
Special Fire Fighting Procedures	Wear MSHA/NIOSH approved, pressure demand self contained breathing apparatus with full protective equipment. Cool fire-exposed containers with water spray. For small spills: Smother with water, wet blanket or towel. Cover with sand if it. Keep area isolated.
Unusual Fire & Explosion Hazards	Solvent vapors can travel to an ignition source, such as a burner burner or furnace, and flash back. Material can form explosive vapors with air.

SECTION V: REACTIVITY DATA

Chemical Stability	Stable
Conditions to Avoid	Keep away from excess heat or flame
Incompatibility (materials to avoid)	Strong oxidizers
Hazardous Decomposition/By products	Combustion will produce CO ₂ and possibly CO
Hazardous Polymerization	Will not occur. Keep away from excess heat or flame

MATERIAL SAFETY DATA SHEET

Product Identity (as used on label): **PERFECTIM® Peel-Away Die Spacer System: Die Spacer #2** toluene red colored liquid

SECTION VI: HEALTH HAZARD DATA

Routes of Entry	Inhalation? - Yes Skin? Yes Ingestion? Yes
Health Hazards (Acute)	Irritant to skin, eyes, and respiratory tract
Health Hazards (Chronic)	Prolonged inhalation can cause dizziness, nausea, headache. Repeated contact with skin can cause defatting, drying and cracking of skin, and dermatitis. Repeated exposure can damage the central nervous system.
Commutability	NTP? No IARC Monographs? No OSHA Regulated? Yes (Methyl Ethyl Ketone)
Signs and Symptoms of Exposure	Inhalation: Solvent vapor or mist can cause headache, nausea, dizziness, incoordination, stupor, and irritation of nose, throat and lungs. Repeated overexposure to methyl ethyl ketone, PM acetate and Aromatic 100 can effect central nervous system. Ingestion: May cause irritation of digestive tract, drowsiness, dizziness, loss of coordination, tongue. Inhalation: Vapors can irritate nose, throat and lungs. Skin Contact: Can cause rash or burning feeling upon contact. Eye Contact: Direct contact may cause burning, tearing, redness, swelling.
Medical Conditions Aggravated by Exposure	Respiratory conditions or dermatitis
Emergency and First Aid Procedures	Inhalation: Remove subject to fresh air. If not breathing, apply artificial respiration. Get medical attention. Skin Contact: Wash well with soap and water. Remove contaminated clothing. Eye Contact: Substance can cause irritation and transient cornea injury. Flush well with water for at least 15 minutes. Consult physician. Ingestion: Do not induce vomiting. Keep person warm and quiet. Get medical attention.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled	Keep all unprotected and unnecessary people away. Remove all sources of ignition. Wear MSHA/NIOSH approved respirator. Pressure-demand, self-contained breathing apparatus is preferred. Dike and contain spill with inert material (sand, earth, etc.) and transfer the liquid and solid separately to containers for disposal. For small spills, wear latex gloves and clean with paper towels and dispose of properly or remove to out of doors to a low vapors to evaporate. Caution, floors may become slippery. Keep out of water supplies.
Waste Disposal Method	For discard, this is a hazardous waste (RCRA 40001). Reportable quantity is 100 lbs. (40 CFR 302). In accordance with local, state and federal regulations, accumulate liquid in approved equipment. For small quantities, allow solvent to evaporate in well ventilated area or outdoors (purchased). Dumping into sewers, on ground, or into any body of water is strongly discouraged and may be illegal. Handling and Storage Precautions: Avoid inhalation of vapors. Work in a well ventilated area. Store away from open flame and heat. Keep containers tightly capped.
Handling and Storage Precautions	Store away from excessive heat or open flame. Store bottles upright. Make sure caps are secured tightly. Limit storage of flammable material to approved areas.
Other Precautions:	Keep away from spark producing tools or equipment.

SECTION VIII: CONTROL MEASURES / SPECIAL PROTECTION INFORMATION

Respiratory Protection	None required if good ventilation is maintained. For bulk, NIOSH approved vapor mask required for PM Acetate.
Ventilation	Keep area well ventilated. For high concentration, use explosion proof local exhaust at point of vapor.
Protective Gloves	Impervious gloves - Latex gloves adequate.
Eye Protection	Splash proof safety goggles or glasses.
Other Protective Equipment	Rubber apron, eye bath and safety shower.
Work/Hygiene practices	Do not smoke, eat or drink where material is handled. Wash hands after use.

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MATERIAL SAFETY DATA SHEET

To comply with U.S. Department of Labor Occupational Safety and Health Admin. Order 1058600
Hazard Communication Standard 29 CFR 1910.1200

perfectIM[®]
SYSTEMS

Product Identity (as used on label): **PERFECTIM[®] Peel-Away Die Spacer System: Thinner #1** (clear light blue colored liquid)
(for use with Spacer #1)

SECTION I: IDENTIFICATION

J. Morita, USA, Inc. 9 Maxon Irvine, CA 92618 Telephone number for information 1-888-J.MORITA (1-888-566-7432)	Emergency Phone Number Date Prepared Common names and synonyms	24 hour contact within the United States CHEMTREC 1-800-424-9300 24 hour contact outside the United States 703-527-3887 03/01/2000 Thinner or Diluent
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SECTION II: HAZARDOUS MATERIALS / IDENTITY INFORMATION

<u>Chemical & Common Names</u>	<u>CAS No.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other limits</u>	<u>§</u>
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Hazardous ingredients

Contains no components in reportable quantity in 29 CFR 1910.1000 tables Z-1, Z-2, Z-3 nor any other pertinent sections of 29 CFR 1910.1001 through 1910.1929.

* N/A designates not applicable

SECTION III: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point (°F)	212 °F / 100° C
Vapor Pressure (mm. Hg)	Not established
Vapor Density (Air=1)	Not established
Solubility in H ₂ O	Completely
Appearance/Color	Clear light blue (Clear liquid) Inconsistent odor
Specific Gravity (H ₂ O=1)	1.0
Melting Point	Not applicable
Evaporation Rate (butyl acetate = 1)	Not applicable

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	N/A
Flammable Limits in Air (% by volume)	
LFL	N/A
UFL	N/A
Extinguishing Media	N/A
Special Fire Fighting Procedures	N/A
Unusual Fire & Explosion Hazards	None

SECTION V: REACTIVITY DATA

Chemical Stability	Stable
Conditions to Avoid	Keep from freezing
Incompatibility (materials to avoid)	Strong oxidizers
Hazardous Decomposition/By-products	Not applicable
Hazardous Polymerization	Will not occur

MATERIAL SAFETY DATA SHEET

Product Identity (as used on label): **PERFECTIM® Peel-Away Die Spacer System: Thinner #1** (clear light blue colored liquid)
(for use with Spacer #1)

SECTION VI: HEALTH HAZARD DATA

Routes of Entry	Inhalation? No	Skin? Yes	Ingestion? Yes
Health Hazards (Acute and Chronic)	Unknown to J. Morita USA		
Carcinogenicity	NIHP? No	IARC Monographs? No	OSHA Regulation? No
Signs and Symptoms of Exposure	Unknown to J. Morita USA		
Medical Conditions Aggravated By Exposure	Unknown to J. Morita USA		
Emergency and First Aid Procedures	Skin Contact: Wash with soap and water. Eye Contact: Wash eyes with water.		

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled	Ordinary housekeeping measures are adequate. Wipe up with paper towel and dispose of in ordinary trash. May be landfilled
Waste Disposal Method	Dispose of in accordance with applicable local, state, and federal regulations
Handling and Storage Precautions	Keep containers closed until ready to use. Keep away from freezing conditions
Other Precautions	Material not regulated by D.O.T.

SECTION VIII: CONTROL MEASURES / SPECIAL PROTECTION INFORMATION

Respiratory Protection	None required. Use with adequate ventilation, or work under exhaust hood
Ventilation	Use local exhaust
Protective Gloves	Optional
Eye Protection	Splash proof safety goggles
Other Protective Equipment	Laboratory apron, Eyewash Station
Work/Hygienic practices	Wash hands after use

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MATERIAL SAFETY DATA SHEET

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Hazard Communication Standard 29 CFR 1910.1200

perfectIM[®]
SYSTEMS

Product Identity (as used on label) **PERFECTIM[®] Peel-Away Die Spacer System: Thinner #2** (pink colored liquid)
(for use with Spacer #2 or Die Hardener)

Product Identity (as used on label) **PERFECTIM[®] Peel-Away Die Spacer System: Die Hardener** (orange colored liquid)

SECTION I: IDENTIFICATION

J. Morita, USA, Inc. 9 Mission, Irvine, CA 92618 Telephone number for information 1-888-JMORITA (1-888-566-7482)	Emergency Phone Number 24 hour contact within the United States CHEMTREC 1-800-424-9300 24 hour contact outside the United States: 703-527-3887 Date Prepared 03/01/2000 Common name and synonyms Die spacer hardener, thinners
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SECTION II: HAZARDOUS MATERIALS / IDENTITY INFORMATION

Chemical & Common Name:	CAS No.	OSHA PEL	ACGIH TLV	Other limits	§
Hazardous ingredients Methyl Ethyl Ketone	78-93-3	200 ppm	200 ppm	N/A	>50
Non-hazardous ingredients Resin (polyurethane) proprietary					

(Class on: Flammable Liquid. Keep away from open flame. Causes eye, skin, and respiratory irritation. Harmful if swallowed.)

DOT Hazard Class: Class 3: Flammable liquid, nos, contains ethyl methyl ketones
UN# 1993, ORM-D consumer commodity

* N/A * designates not applicable

Hazard Rating Key: 0=normal 1=slight 2=moderate 3=serious 4=severe

HFPA INFORMATION

HEALTH	ENV.	REACTIVITY
2	3	0

SECTION III: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point (°F)	172.3 °F
Vapor Pressure, mm. Hg	80 mm Hg
Vapor Density (Air=1)	> 1 (heavier)
Solubility in H ₂ O	Slightly
Appearance/Odor	Die Hardener is orange. Thinner #2 for Spacer #2 and Die Hardener is light pink. Both have low viscosity and a sharp odor.
Specific Gravity (H ₂ O=1)	0.95 - 1.0
Percent volatile by volume (V)	> 80%
Evaporation Rate (water = 1)	> 1 (faster)

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	Closed cup: -4°C (25°F), Tag closed cup ASTM D 36
FL	1.B
UEL	11.5
Extinguishing Media	Water fog; alcohol foam; CO ₂ ; or dry chemical
Special Fire Fighting Procedures	For fire: Wear MSDHA/NIOSH approved, pressure demand, self contained breathing apparatus with full protective equipment. Cool fire-exposed containers with water spray. High pressure water streams of water will spread the fire.
Unusual Fire & Explosion Hazards	Solvent vapors can travel to an ignition source and flash back. Explosive mixtures can form with air. Hazardous decomposition products: carbon monoxide

SECTION V: REACTIVITY DATA

Chemical Stability	Stable
Conditions to Avoid	Avoid open flame, welding arcs or other high temperature sources
Incompatibility (materials to avoid)	None
Hazardous Decomposition/By-product	Clouds of carbon
Hazardous Polymerization	Will not occur

MATERIAL SAFETY DATA SHEET

Product Identity (as uses on label) **PERFECTIM[®] Peel-Away Die Spacer System; Thinner #2**
(for use with Spacer #2 or Die Hardener)

Product Identity (as uses on label) **PERFECTIM[®] Peel-Away Die Spacer System; Die Hardener**

SECTION VI: HEALTH HAZARD DATA

Routes of Entry	Inhalation? - Yes Skin? - Yes Ingestion? - Yes
Health Hazards (Acute)	Irritant to skin, eyes, and respiratory tract.
Health Hazards (Chronic)	Repeated exposure can cause a) central nervous system damage, b) dermatitis or drying and cracking of skin, c) dizziness, nausea, or headache.
Carcinogenicity	NTPB: No IARC Monographs? No OSHA Regulated? Yes (Methyl Ethyl Ketone)
Signs and Symptoms of Exposure	Inhalation: Solvent vapors or spray mists can cause headache, nausea, dizziness and irritation of the nose, throat and lungs. Skin Contact: Prolonged or repeated contact can cause skin irritation. Chronic exposure may cause scaling type of dermatitis. Eye Contact: Direct contact can cause eye irritation and temporary damage. May cause conjunctivitis. Medical Conditions Aggravated By Exposure Respiratory conditions or dermatitis. Emergency and First Aid Procedures Inhalation: Remove subject to fresh air. If not breathing, apply artificial respiration. See physician. Anesthetic or narcotic effect may occur. Skin Contact: Wash skin thoroughly with soap and water. Wash clothing before reuse. Eye Contact: Immediately and thoroughly wash eyes with plenty of water for at least 15 minutes and see a physician if irritation occurs. Ingestion: Do not induce vomiting. Call a physician immediately and/or transport to medical facility.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled	Keep all unprotected and unnecessary people away. Remove all sources of ignition. Wear pressure demand, self contained breathing apparatus. Dike and contain spill with inert material (sand, earth, etc.) and transfer the liquid and solid separately to containers for disposal. For small spills, clean with paper towels and dispose of properly or remove to out of doors to allow vapors to evaporate. Caution: floors may become slippery. Keep out of water supplies.
Waste Disposal Method	For discard, this is a hazardous waste (RCRA #0001. Reportable quantity is 100 lbs. [40 CFR 302]. In accordance with local, state and federal regulations: incinerate liquid in approved equipment. For small quantities, allow solvent to evaporate in well ventilated area, preferably outdoors. Dumping into sewers, on the ground, or into any body of water is strongly discouraged and may be illegal.
Handling and Storage Precautions	Keep containers tightly capped. Clean neck of resin container free of resin build-up to maintain proper seal. Store containers in approved areas for flammables, away from heat and sources of flame. Do not smoke when using material. Keep away from open flame of burner. Keep containers sealed. Keep material out of direct sunlight.
Other Precautions	None.

SECTION VIII: CONTROL MEASURES / SPECIAL PROTECTION INFORMATION

Respiratory Protection	None required if good ventilation is maintained.
Ventilation	Local exhaust, explosion proof local exhaust at point of vapor.
Protective Gloves	Impervious gloves.
Eye Protection	Spill-proof safety goggles.
Other Protective Equipment	Eye wash and safety shower.
Work/Hygiene practices	Do not smoke, eat or drink where material is handled. Wash hands after use.

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