



MURAKAMI

SAFETY DATA SHEET

SECTION 1 — PRODUCT IDENTIFICATION

Product identifier: Murakami Haze/Ghost Remover

Product Number: 701

Product Use: Ink Remover

Chemical Formula: Mixture of Proprietary Solvents

Manufacturer's name and address: Refer to supplier

Supplier name and address:

Murakami Screen USA
745 Monterey Pass Road
Monterey Park, CA 91754
Phone Number: 800-562-3534

Emergency Telephone #: Chemtrec (Day or Night) 800-424-9300
(For Chemical Emergency: Spill, Leak, Fire, Exposure or Accident)

This MSDS complies with OSHA Hazard Communication Standard 29CFR 1910.1200

IMPORTANT: Read this MSDS before handling and disposing of this product. Pass this information on to employees, customers, and users of this product.

SECTION 2 — HAZARDS IDENTIFICATION

WARNING!



EXPOSURE PREVENTION: STRICT HYGIENE!

HAZARD STATEMENTS:

H100s = General, H200s = Physical, H300s = Health, H400s = Environmental

- | | |
|------|----------------------------------------------------------------------------|
| H226 | Combustible liquid (North America), Flammable liquid & vapour (Elsewhere). |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |

H320	Causes eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

P100s = General, P200s = Prevention, P300s = Response, P400s = Storage, P500s = Disposal

P262	Do not get in eyes, on skin, or on clothing.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + 310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS #	EINECS #	WT %
Dimethyl Glutarate	1119-40-0	214-277-2	35-40
2-Butoxyethanol	111-76-2	203-905-0	20-30
Dimethyl Succinate	106-65-0	203-419-9	5-10
Dimethyl Adipate	627-93-0	211-020-6	5-10
Methoxypropoxypropanol	34590-94-8	252-104-2	5-10
Nonylphenol Ethoxylate	9016-45-9	-	0-5
d-Limonene	5989-27-5	227-813-5	0-5

Trace components: Trace ingredients (if any) are present in <1% concentration, (<0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION

SECTION 4 — FIRST AID MEASURES

EYE CONTACT:

If this product enters the eyes, open eyes while under gently running water. Use sufficient force to open eyelids. "Roll" eyes to expose more surface. Minimum flushing is for 15 minutes. Seek immediate medical attention.

SKIN CONTACT:

If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.

INHALATION:

After high vapour exposure, remove to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. It may be

dangerous to the person providing aid to give outh-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SWALLOWING:

If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, give two glasses of water to drink. DO NOT INDUCE VOMITING. Never induce vomiting or give liquids to someone who is unconscious, having convulsions, or unable to swallow. Seek immediate medical attention.

NOTES TO PHYSICIAN:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (such as: Gastric lavage after endotracheal intubation).

SECTION 5 — FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES:

NO open flames, NO sparks, & NO smoking. Above flash point, use a closed system, ventilation, explosion-proof electrical equipment, lighting.

EXTINGUISHING MEDIA:

Use dry powder, AFFF, alcohol-resistant foam, water spray, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES:

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used. Do not enter confined fire-space without full bunker gear. (Helmet with face shield, bunker coats, gloves & rubber boots), Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES:

Isolate from oxidizers, heat, & open flame. Closed containers may explode if exposed to extreme heat. Applying to hot surfaces requires special precautions. Empty container very hazardous! Continue all label precautions!

SECTION 6 — ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE AND ENVIRONMENTAL PRECAUTIONS:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

PERSONAL PROTECTIVE EQUIPMENT:

The proper personal protective equipment for incidental releases (such as: 1 Liter of the product released in a well-ventilated area), use impermeable gloves (triple-gloves (rubber gloves and nitrile gloves, over latex gloves), goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard hat. Self-Contained Breathing Apparatus or respirator

may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.

ENVIRONMENTAL PRECAUTIONS:

Stop spill at source. Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Close or cap valves and/or block or plug hole in leaking container and transfer to another container. Keep from entering storm sewers and ditches which lead to waterways, and if necessary, call the local fire or police department for immediate emergency assistance.

CONTAINMENT AND CLEAN-UP MEASURES:

Absorb spilled liquid with polypads or other suitable absorbent materials. If necessary, neutralize using suitable buffering material, (acid with soda ash or base with phosphoric acid), and test area with litmus paper to confirm neutralization. Clean up with non-combustible absorbent (such as: sand, soil, and so on). Shovel up and place all spill residue in suitable containers. Dispose of at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal (see Section 13 – Disposal Considerations).

SECTION 7 — HANDLING AND STORAGE

HANDLING:

Isolate from oxidizers, heat, & open flame. Use only with adequate ventilation. Avoid repeated breathing of vapour or spray mist. Do not get in eyes, onskin or clothing. Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wash clothing before reuse. Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, braze, or weld. Empty container very hazardous! Continue all label precautions!

STORAGE:

Keep in fireproof surroundings. Keep separated from strong oxidants. Store in an area without a drain or sewer access. Keep container tightly closed & upright when not in use to prevent leakage.

NONBULK: CONTAINERS:

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and “NO SMOKING” signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

BULK CONTAINERS:

All tanks and pipelines which contain this material must be labelled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

TANK CAR SHIPMENTS:

Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer’s recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tanks (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

MATERIAL	CAS #	EINECS #	TWA (OSHA)	TLV (ACGIH)
Dimethyl Glutarate	1119-40-0	214-277-2	None Known	None Known
2-Butoxyethanol	111-76-2	203-905-0	50 ppm S	20 ppm S
Dimethyl Succinate	106-65-0	203-419-9	None Known	None Known
Dimethyl Adipate	627-93-0	211-020-6	None Known	None Known
Methoxypropoxypropanol	34590-94-8	252-104-2	100 ppm	100 ppm
Nonylphenol Ethoxylate	9016-45-9	-	None Known	None Known
d-Limonene	5989-27-5	227-813-5	None Known	None Known

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%

RESPIRATORY EXPOSURE CONTROLS:

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION:

LOCAL EXHAUST: Necessary

MECHANICAL (GENERAL): Acceptable

SPECIAL: None

OTHER: None

Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Do not get in eyes, on skin or clothing. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers. Wash at end of each workshift & before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Destroy contaminated leather

SECTION 9 — PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE:

Liquid, Water-White

ODOR:

Lemon

ODOR THRESHOLD:

Not Available

pH (Neutrality):

Not Applicable

MELTING POINT/FREEZING POINT:

Not Available

BOILING RANGE (IBP, 50%, Dry Point):

177 198 213°C/351 389 417°F (*=End Pt)

FLASH POINT (TEST METHOD):

91 C/ 195 F (TCC)

EVAPORATION RATE (n-BUTYL ACETATE=1):

Not Applicable

FLAMMABILITY CLASSIFICATION:

Class III-B

LOWER FLAMMABLE LIMIT IN AIR (% by vol):	1.0
UPPER FLAMMABLE LIMIT IN AIR (% by vol):	Not Available
VAPOR PRESSURE (mm of Hg)@20 C:	0.545
VAPOR DENSITY (air=1):	5.0
GRAVITY @ 68/68 F / 20/20 C:	
SPECIFIC GRAVITY (Water=1):	1.010
POUNDS/GALLON:	8.413
WATER SOLUBILITY:	Appreciable
PARTITION COEFFICIENT (n-Octane/Water):	Not Available
AUTO IGNITION TEMPERATURE:	260 C / 500 F
DECOMPOSITION TEMPERATURE:	Not Available
VOC'S (>0.44 lbs/sq in):	0.0 Vol% / 0.0 g/L / 0.000 Lbs/Gal
TOTAL VOC'S (TVOC)*:	97.0 Vol% / 983.5 g/L / 8.1 Lbs/Gal
NONEXEMPT VOC'S (CVOC)*:	30.0 Vol% / 270.6 g/L / 2.2 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS):	0.0 Wt% / 0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg@20C):	0.251

*Using California South Coast Air Quality Management District (SCAQMD) rule 1143.

SECTION 10 — STABILITY & REACTIVITY

STABILITY:

Stable under normal conditions.

CONDITIONS TO AVOID:

Isolate from oxidizers, heat, & open flame.

MATERIALS TO AVOID:

Reacts with strong oxidants, causing fire & explosion hazard.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION:

Will not occur.

SECTION 11— TOXICOLOGICAL INFORMATION

ACUTE HAZARDS

EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis. Absorption thru skin increases exposure. Primary irritation to eyes, redness, tearing, blurred vision. Liquid can cause eye irritation. Wash thoroughly after handling.

INHALATION:

Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful. Breathing vapour can cause irritation. Acute overexposure can cause harm to kidneys, blood, nerves, liver, lungs.

SWALLOWING:

Harmful or fatal if swallowed. Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea. The symptoms of chemical pneumonitis may not show up for a few days.

SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED**CONDITIONS AGGRAVATED:**

Chronic overexposure can cause harm to kidneys, blood, nerves, liver. Lungs. Persons with severe skin, liver or kidney problems should avoid use.

CHRONIC HAZARDS**CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:**

This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%. Absorption thru skin may be harmful.

IRRITANCY OF PRODUCT: This product is irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: No component of this product is known to be a sensitizer.

MUTAGENICITY: This product is not reported to produce mutagenic effects in humans.

EMBRYOTOXICITY: This product is not reported to produce embryotoxic effects in humans.

TERATOGENICITY: This product is not reported to produce teratogenic effects in humans.

REPRODUCTIVE TOXICITY: This product is not reported to cause reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (such as: within the eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MAMMALIAN TOXICITY INFORMATION

MATERIAL	CAS #	EINECS #	LOWEST KNOWN LETHAL DOSE DATA
Ethylene Glycol Butyl Ether	111-76-2	203-905-0	LOWEST KNOWN LD50 (ORAL) 320.0 mg/kg (Rabbits)
Ethylene Glycol Butyl Ether	111-76-2	203-905-0	LOWEST KNOWN LC50 (VAPORS) 700 ppm (Mice)
Ethylene Glycol Butyl Ether	111-76-2	203-905.0	LOWEST KNOWN LD50 (SKIN) 440.0 mg/kg (Rabbits)

SECTION 12 — ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

EFFECT OF MATERIAL ON PLANTS AND ANIMALS:

This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11

(Toxicological Information) for further data on the effects of this product's components on test animals.

EFFECT OF MATERIAL ON AQUATIC LIFE:

The most sensitive known aquatic group to any component of this product is:

Daphnia Magna 1250 ppm or mg/L (96 hour exposure).

Keep out of sewers and natural water supplies. The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in aquatic animals.

MOBILITY IN SOIL:

This material is a mobile liquid.

DEGRADABILITY:

This product is completely biodegradable.

ACCUMULATION:

Bioaccumulation of this product has not been determined.

SECTION 13 — DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste management options. Recycle/dispose of observing national, regional, state, provincial and local health, safety & pollution laws. If in doubt, contact appropriate agencies.

RCRA/EPA WASTE INFORMATION: Check with regulatory authorities. (Local, State and Federal)

SECTION 14 — TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION) PROPER SHIPPING NAME: Not regulated by DOT

AIR (ICAO/IATA) SHIPPING NAME: Not regulated

VESSEL (IMO/IMDG) SHIPPING NAME: Cleaning compound – Not regulated by DOT

CANADA TRANSPORT OF DANGEROUS GOODS SHIPPING NAME: Not regulated

SECTION 15 — REGULATORY INFORMATION

EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Chronic Health

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification:

This product contains the indicated <*> toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community right-To-Know Act of 1986 & of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

SARA TITLE III INGREDIENTS	CAS #	EINECS #	WT %	(REG.SECTION)	RQ (LBS)
*2-Butoxyethanol	111-76-2	203-905-0	20-30	(313)	None
*Nonylphenol Ethoxylate	9016-45-9	-	0-5	(302,313,RCRA)	None

INTERNATIONAL REGULATIONS:

The components of this product are listed on the chemical inventories of the following countries: Australia (AICS), Canada (DSL, NSDL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS):

D2B: Irritating to skin/eyes.

SECTION 16 — OTHER INFORMATION**HAZARD RATINGS:**

HEALTH (NFPA): 2, HEALTH (HMIS): 2, FLAMMABILITY: 1, PHYSICAL HAZARD: 0
(Personal Protection Rating to be supplied by user based on use conditions.)

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING:

See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for confirmation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency.

Conditions of use are beyond our control, and, therefore, users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

Unless updated, the Safety Data Sheet is valid until 06/01/2015