

SAFETY DATA SHEET

1. Product and Company Identification

Product Name: Dry Film 4A
Product Code: 131410
Product Type: Aerosol
Product Use: Mold Release

Manufacturer: IMS Company	Emergency Phone	800-424-9300
Address: 10373 Stafford Road	Prepared by	Product Safety Advisor
Chagrin Falls, OH 44023-5296	Prepared/Revised	April 14, 2015
WEB www.imscompany.com	E-mail	sales@imscompany.com

NOTE: The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We provide this information as guidance for providing personal protection to your employees. The user has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. The user must meet all applicable safety and health standards. We provide this information as guidance for providing personal protection to your employees.

2. Hazard Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Aerosols	Category 2
Gases under pressure	Liquefied gas
Skin Irritation	Category 2
Skin sensitization	Category 1
Eye Irritation	Category 2A
Reproductive toxicity	Category 2
Specific target organ toxicity single exposure	Category 3 (Central nervous system)
Specific target organ Toxicity repeated exposure	Category 2
Aspiration hazard	Category 1

Pictograms:



Signal Word: Danger

H223	Flammable aerosol
H280	Contains gas under pressure; may explode if heated
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H336	May cause drowsiness or dizziness
H304	May be fatal if swallowed and enters airways
H373	May cause damage to organs through prolonged or repeated exposure

Precautionary Statements:

Prevention

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P281 Use personal protective equipment as required.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P211 Do not spray on an open flame or other ignition source.
- P251 Pressurized container: Do not pierce or burn, even after use.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P271 Use only outdoors or in a well ventilated area
- P264 Wash thoroughly after handling
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- P308+P313+P314 If exposed, concerned, or feel unwell: Get medical advice/attention
- P301+P310 If Swallowed: Immediately call a poison center or doctor
- P331 Do not induce vomiting
- P302 + P352 If on skin: Wash with plenty of soap and water..
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P304+P340 If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a poison center/doctor if you feel unwell
- P305+P351+P338 If in eyes Rinse cautiously with water for several minutes, Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/ attention
- P403+P405 Store in well ventilated place.. Store locked up.
- P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F
- P501 Dispose of contents/container in accordance with local/regional regulations.

3. Composition information on ingredients

Ingredients	CAS #	Percent
1,1,-Difluoroethane (HFC-152a)	75-37-6	30-40 %
Dimethyl Ether	115-10-6	30-40 %
Isohexane	92112-69-1	20-30
Cyclopentane	287-92-3	0-3%
N_Hexane	110-54-3	0-2 %
Isopropyl Alcohol	67-63-0	< 2 %
Isopropyl Alcohol	67-63-0	< 2 %
Poly – TFE, Methylcyclohexyl	65530-85-0	< 1 %
Polytetrafluoroethylene	9002-84-0	< .5 %

4. First Aid Measures

Eye Contact:

Flush with warm water for 15 minutes. Seek medical attention.

Skin Contact:

Wash with soap and water. Remove any contaminated clothing and launder before reusing. If irritation persists, seek medical attention.

Inhalation:

Remove exposed individual to fresh air, protecting yourself. Restore breathing if necessary. Contact a physician.

Ingestion:

Immediately give the person two large glasses of water. Do not induce vomiting. Get medical attention immediately. **DO NOT GIVE AN UNCONCIOUS OR CONVULSING PERSON ANYTHING BY MOUTH!**

5. Fire Fighting Measures

Flash Point: Flash point of propellant <0 degrees F.

Flammable limits in air, % by volume:

Upper: 18 % (VOL.) Gas in air (propellant portion)

Lower: 3.4 % (VOL.) Gas in air (propellant portion)

Extinguishing Media:

Dry chemical, carbon dioxide, halon, or foam is recommended. Water spray may be used to cool containers or structures. Halon may decompose into toxic materials and carbon dioxide will displace oxygen, take proper precautions when using these materials.

Unusual Fire & Explosion Hazards:

This material may be ignited by extreme heat, sparks, flames or other ignition sources (static electricity). Vapors are heavier than air and will collect in low areas (sewers) or travel considerable distances. If containers are not cooled in a fire, they may rupture and ignite.

Special Fire Fighting Procedures:

At elevated temperatures (over 130F) aerosol container may burst, vent or rupture; use equipment or shielding to protect personnel. Cooling exposed containers with streams of water may be helpful. Emergency responders should wear self-contained breathing apparatus. Wear other protective gear as conditions warrant. Keep unauthorized people out and try to contain spills or leaks if it can be done safely. Material will float on water, avoid spreading the fire.

6. Accidental Release Measures

Spill or Leak Instructions

Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Assess the spill situation, as the spill may not evolve large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until spilled product is removed.

7. Handling and Storage

Handling:

Store below 120°F in cool, dry area, out of direct sunlight and away from strong oxidizers. Do not puncture or burst. Use in accordance with good work place practices. Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

Empty containers may contain residues from the product. Treat empty containers with the same precautions as the material last contained. Do not cut, weld or apply heat to empty containers Do not incinerate

Storage:

Store in a cool, dry area, away from heat or direct sunlight. Keep containers closed when not in use. Do not store with incompatible materials

8. Exposure Controls / Personal Protection

Protective Equipment:

Use synthetic gloves if necessary to prevent excessive skin contact. Do not wear contacts and always use ANSI approved safety glasses or splash shield.

Engineering Controls:

General or dilution ventilation is frequently sufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Use a NIOSH approved respirator if ventilation is not adequate to maintain exposures below TLV levels.

Respiratory Protection:

Use adequate ventilation to maintain exposure limits. If the exposure limits of the products or any of its components is exceeded, an approved organic vapor mask should be used (consult your safety equipment supplier). Above 1000 ppm, an approved self-contained breathing apparatus or airline respirator with full face-piece is required

Other Suggested Equipment:

Eye wash station and emergency showers should be available. Spill containment equipment should be available.

Discretion Advised:

We take no responsibility for determining what measures are required for personal protection in any specific application. The general information should be used with discretion.

Exposure guidelines:

Ingredients	CAS #	Percent	Exposure Limits
1,1,-Difluoroethane (HFC-152a)	75-37-6	30-40 %	1000 ppm 8 hour TWA (1)
Dimethyl Ether	115-10-6	30-40 %	1000 ppm 8 hour TWA (1)
Isohexane	92112-69-1	20-30 %	OSHA (TWA) 500 ppm ACGIH (TWA) 500 ppm
Cyclopentane	287-92-3	0-3 %	OSHA (TWA) 500 ppm ACGIH (TWA) 600 ppm
N-Hexane	110-54-3	.0-4 %	OSHA (TWA) 500 ppm ACGIH (TWA) 50 ppm
Isopropyl Alcohol	67-63-0	< 2 %	OSHA (PEL) 400 ppm ACGIH (TLV) 200 ppm
Isopropyl Alcohol	67-63-0	< 2 %	OSHA (PEL) 400 ppm ACGIH (TLV) 200 ppm
Poly – TFE, Methylcyclohexyl	65530-85-0	< 1 %	NE
Polytetrafluoroethylene	9002-84-0	< .5 %	10 mm/m ³ 8 hour TWA 5 mg/m ³ respirable dust (1)

(1) Supplier Acceptable Exposure Limit.

9. Physical and Chemical Properties

Appearance: Whiter mist as dispensed from aerosol can. **Odor:** Negligible
Evaporation Rate: Ether = 1 Slower
PH: NA **Melting/Freezing point:** NE
Initial Boiling point and boiling range: NE **Flash Point:** Flash point of propellant < 0°F
Flammability: Flammable **Vapor pressure:** >30 psi
Vapor density >1 (Air=1)
Relative density: NE **Solubility:** negligible
Partition coefficient: NE **Auto-ignition temperature:** NE
Decomposition temperature: NE **Viscosity:** NA
Flammable limits in air, % by volume:
Upper: 18 % (VOL.) Gas in air (propellant portion)
Lower: 3.4 % (VOL.) Gas in air (propellant portion)

10. Stability and Reactivity

Stability: Stable **Conditions to Avoid:** Heat, spark, and open flame
Incompatibility: Strong-Oxidizing Agents
Hazardous Decomposition: Combustion will produce Carbon Monoxide, Carbon Dioxide and nitrogen-oxygen compounds.
Hazardous Polymerization: Will not occur

11. Toxicological Information

Component Toxicological Information:

Polyterafluoroethylene	9002-84-0
Oral	LD50 Rat > 11,280 mg/kg
Poly – TFE, Methylcyclohexyl	65530-85-0
Oral	ALD > 17,000 mg/kg
IPA	67-63-0
Oral	LD50 5,840 mg/kg
Inhalation	LC50 Rat 72.6 mg/l 4h
Dermal	LD50/rabbit 12,870 mg/kg
N-Hexane	110-54-3
Oral	LD 50 Rat: 25 g/kg
Inhalation	LC 50 Rat: 48000 ppm, 4 h
Dermal	LD 50 Rabbit: > 1.3 g/kg
Dimethyl Ether	115-10-6
Inhalation	LC50: 164,000 ppm in rats 4 h
HFC-152a	75-37-6
Oral ALD	>1500 mg/kg in rats
Inhalation ALC	4 hour 383,000 ppm in rats

Reproductive toxicity assessment n-hexane

Some evidence of adverse effects on sexual function and fertility, and/or development, based on animal experiments

Additional Information

Prolonged or repeated contact with skin may cause:., defatting, dermatitis. Contact with eyes can cause:., Redness, blurred vision, provokes tears. Effects due to ingestion may include:., gastrointestinal discomfort, central nervous system depression, lung irritation, chest pain, pulmonary edema, giddiness, slowed reaction time, slurred speech, headache, dizziness, drowsiness unconsciousness.

12. Ecological Information

110-54-3

Toxicity to fish:	LL50 Pimephales promelas (fathead minnow) – 2.5 mg/l – 96 h
Toxicity to daphnia and other aquatic Invertebrates.	EL50(Daphnia magna (Water flea): 3,878 mg/l 48 h
Toxicity to algae:	EL50 Chlorella vulgaris (Fresh water algae) – 12840 mg/l 3h EC50 –Skeletoma – 0.30 mg/l – 8h

75-37-6

Toxicity to fish	LC50 / 96 h / Fish (unspecified species): 295,783 mg/l
Toxicity to aquatic invertebrates	EC50 / 48 h / Daphnia: 146,695 mg/l

115-10-6

Toxicity to fish	LC50/96 h/Poecilia reticulata (guppy): >4000 mg/l
Toxicity to aquatic invertebrates	EC50/48 h/Daphnia: >4000 mg/l LC50/48 h/Daphnia: 755,549 mg/l
Chronic toxicity to fish	Due to its physical properties, there is no potential for

67-63-0 Isopropanol

Toxicity to Fish	: LC 50 (pimephales promelas (fathead minnow)): 9,640 mg/l Exposure 96 h
Toxicity to daphnia	: EC50 (Daphnia magna (water flea)): 10,000 mg/l Exposure 24 h
Toxicity to bacteria	: toxicity threshold (pseudomonas putida): 1,050 mg/l Exposure 16 h

Ecotoxicity Assessment
Acute aquatic toxicity:

Toxic to aquatic life with long lasting effects.

13. Disposal Considerations

Do not puncture or burn containers. Give empty, leaking, or full containers to disposal service equipped to handle and dispose of aerosol (pressurized) containers. Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

14. Transport Information

Aerosols (limited quantity),
Class 2.1, ERG 126

AIR (IATA)
Aerosols (limited quantity),
Class 2.1, ERG 126, UN No. 1950
Vessel
Aerosol (Limited Quantity), Class 2.1, UN No 1950

15. Regulatory Information

Environmental Regulations

SARA 302/304:

None

SARA 311/312:

Immediate (x) Delayed (x) Fire (x) Reactive () Sudden Release of Pressure (x)

Section 313

n-hexane	110-54-3	1-1.5%
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California Prop. 65:

None

All the chemicals used in this product are TSCA listed.
Check with your local regulators to be sure all local regulations are met.

16. Other Information

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Level 2 Aerosol

HMIS: Health: 2 Flammability: 4 Reactivity: 0

RATING: 4-EXTREME 3-HIGH 2-MODERATE 1-SLIGHT 0-INSIGNIFICANT

Note:

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. We make no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health

standards. Possession of an SDS does not indicate that the possessor of the SDS was a purchaser or user of the subject product.