

MA420FS ADHESIVE

This product appears in the following stock number(s):

IT800 IT802 IT808

Last revised: 11/20/01

Printed: 11/27/2001

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** MA420FS ADHESIVE**General use:** Adhesive**Chemical family:** Acrylate**MANUFACTURER**ITW Plexus
30 Endicott St.
Danvers, Massachusetts 01923**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (978) 777-1100**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Methacrylate esters		TRADE SECRET	1-10	n/e	n/e	1 mg/m ³ , skin (AIHA-WEEL)
Methacrylic acid	MAA	79414	1-10	20 ppm	20 ppm	4 ppm (Manufacturer)
Methyl Methacrylate Monomer	MMA	80626	40-70	50 ppm	100 ppm	100 ppm (Canada)
N,N-Dimethyl-para-toluidine	DMT	99978	1-10	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: Off-white paste with varied fragrant odor.

WARNING! Flammable. Eye, skin and respiratory irritant. Skin sensitizer. Harmful if inhaled or absorbed through skin. Chronic overexposure may cause liver and kidney effects.

Potential health effects

Primary routes of exposure: Skin contact Skin absorption Eye contact Inhalation Ingestion

Symptoms of acute overexposure:

Skin: May cause irritation and sensitization (itching, redness, rashes, hives, burning, swelling). May be absorbed through the skin.

Eyes: Liquid and vapors causes moderate irritation (blurred vision, tearing, redness). May cause corneal damage.

Inhalation:

High concentration is irritant to respiratory tract and may cause dizziness, headache, anaesthetic effects, unconsciousness.

Ingestion:

Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.

Effects of chronic overexposure:

Prolonged exposure may lead to kidney, lung, and liver damage; not likely to cause cancer. Not believed to represent a carcinogenic or mutagenic hazard. May cause dermatitis (itching, redness, rashes, hives, burning, swelling) and/or numbness/prickling of the skin. Repeated or prolonged inhalation exposure may cause asthma. May effect the central and/or peripheral nervous systems.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer:No

Medical conditions which may be aggravated by exposure:

Eye disease, skin disorders and allergies (e.g.eczema), asthma and lung disorders.

Other effects:

MMA: Developmental toxicity observed in animal tests, but only at levels toxic to the mother. MMA is reported to impair human olfactory function.

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Immediately remove contaminated clothing and excess contaminant. Flush skin with water. Wash thoroughly with warm soap and water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if breathing is difficult. Get medical attention if symptoms persist.

First aid for ingestion:

Do NOT induce vomiting. Rinse mouth out with water, then sip 2 glasses of water. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips (if sitting) or to the side (if lying down) to prevent aspiration. Get medical attention.

5. FIRE FIGHTING MEASURES**General fire and explosion characteristics:**

Vapor forms explosive mixture with air.

Extinguishing media:

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): 50**Method:** TCC**Explosive limits in air (percent) -- Lower:** 1.7 **Upper:** 12.5**Special firefighting procedures:**

Approach fire from upwind. Wear self contained breathing apparatus and full protective equipment. Cool tank with water spray. Fight fire from a distance as the heat may rupture the tanks.

Unusual fire and explosion hazards:

Sealed containers at elevated temperatures may rupture due to polymerization. Vapors are heavier than air and may travel to ignition sources and flash back. Burning liquid may float on water. Personnel in vicinity and downwind should be evacuated.

Hazardous products of combustion:

Carbon monoxide and other unknown toxic and corrosive compounds.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Avoid personal contact. Evacuate area. Eliminate ignition sources. Ventilate area.

Containment:

Dike, contain and absorb with clay, sand or other suitable non-combustible material.

Cleanup:

For large spills, pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand, or other suitable material and dispose of properly (RCRA hazardous waste). Add inhibitor as contaminated monomer may polymerize.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters. Spills on porous surfaces can contaminate groundwater. Use bonding/ grounding lines and non-sparking tools.

7. HANDLING AND STORAGE**Handling precautions:**

Do not breathe vapor or mist. Do not get in eyes, on skin or clothing. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after using and particularly before eating, drinking, smoking, applying cosmetics, or using toilet facilities.

Air dry and then launder contaminated clothing and protective gear before reuse. Close container after each use.

Ground/bond container when pouring. Keep away from heat, flame or sparks. Use non-sparking tools.

Storage:

Keep in a cool place, without direct exposure to sunlight. Keep container tightly closed and otherwise in accordance with NFPA regulations. Maintain air space in storage containers, inhibitor requires oxygen contact to function. Vapors are uninhibited and may form polymers in vents or flame arrestors, resulting in blockage of vents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits.

Other engineering controls :

Have emergency eye wash and safety shower present.

Personal protective equipment**Eye and face protection:**

Wear safety glasses. Wear coverall chemical splash goggles and face shield when eye and face contact is possible.

Skin protection:

Chemical-resistant gloves (i.e. butyl) and other gear as required to prevent skin contact.

Respiratory protection:

A NIOSH/MSHA air purifying respirator with an organic vapor cartridge may be permissible as exposure levels dictate. However use a positive pressure air supplied respirator if there is any potential for uncontrolled release, or unknown exposure levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	0.90-0.95	Boiling point (°F):	213
Melting point (°F):	n/d	Vapor density (air = 1):	> 1
Vapor pressure (mmHg):	28 mm Hg at 68 °F	Evaporation rate (butyl acetate = 1):	3
VOC (grams/liter):	< 100 mixed	Solubility in water:	n/d
Percent volatile by volume:	n/d	pH (5% solution or slurry in water):	n/d
Percent solids by weight:	n/d		

10. STABILITY AND REACTIVITY

This material is chemically stable. Hazardous polymerization may occur.

Conditions to avoid :

Heat, sparks, open flames and other ignition sources. UV light. Inerting. Oxygen-free atmospheres. Corrosion of storage containers. Material can soften paint and rubber.

Incompatible materials:

Oxidizing agents (eg peroxides, nitrates), reducing agents, acids, bases, azo-compounds, catalytic metals (eg copper, iron), halogens. Free radical initiators. Oxygen scavengers.

Hazardous products of decomposition:

Carbon monoxide, carbon dioxide and smoke (unknown toxic and corrosive compounds).

Conditions under which hazardous polymerization may occur:

Excessive heat, excessive aging, storage in the absence of inhibitor, oxygen-free atmospheres, ultraviolet light (sunlight), and inadvertant addition of catalyst.

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): > 2000 mg/kg estimate

Toxicity of MMA exposed near LD50 include blood in the urine and liver changes.

Acute dermal effects: LD50 (rabbit): > 1700 mg/kg estimate

Dermatitis. DMT: rapidly absorbed through skin.

Acute inhalation effects: LC50 (rat): Not available. Exposure: 4 hours.

Toxicity of MMA at 8-100 times TLV from respiratory and gastrointestinal irritation, lung damage, nervous system effects and blood in urine.

Eye irritation:

Not available.

Subchronic effects:

Inhalation: Repeated exposure of MMA at 5-100 times the TLV include lung damage, pulmonary irritation, liver changes, eye irritation, nasal tissue changes, incoordination and upper respiratory irritation. Ingestion: Liver and kidney affects with altered function in both organs. Skin permeation may occur.

Carcinogenicity, teratogenicity, and mutagenicity:

Possible reproductive hazard based on animal data. A mouse lymphoma test was positive for mutagenicity (may be false positive) for trade secret component.

Other chronic effects:

Inhalation: long term exposure of MMA caused inflammation of the nasal cavity, changes in nasal sensory cells and decreased body weight. Ingestion: Can cause decreased body weight, and increased kidney weight

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Methacrylate esters	n/d	n/d	n/d
Methacrylic acid	1060 mg/kg	500 mg/kg	>1300 ppm
Methyl Methacrylate Monomer	7872 mg/kg	> 5000 mg/kg	7093 ppm
N,N-Dimethyl-para-toluidine	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION

Ecotoxicity:

MMA has: estimate of 96 hour median threshold limit: 100-1,000 ppm; 96 hour LC50, fathead minnow: 150 ppm; 96 hour LC50, bluegill sunfish: 232 ppm. MAA has: LC50 = 85mg/l, 96 hr, Rainbow trout (slightly toxic); EC50 > 130 mg/l, 48 hr, Daphnia magna (practically non-toxic); EC50 = 0.6 mg/l, 96 hr, Algae (highly toxic).

Mobility and persistence:

MMA is partially biodegradable in water. BOD-5 day: 0.14 g/g - 0.90 g/g; THOD : 1.92 g/g. MAA readily biodegraded (86% within 28 days) under aerobic conditions.

Environmental fate:

MMA produces high tonnage material in wholly contained systems. Liquid with moderate mobility. Sparingly soluble in water. High potential for bioaccumulation. Low mobility in soil.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

If this product becomes a waste, it would be a hazardous waste by RCRA criteria (40CFR 261). Dispose of according to applicable federal, state, and local regulations. Do not dispose of in a landfill. Incineration is the preferred method of disposal. Empty containers still contain hazardous product residue (vapors and/or liquid). Follow all MSDS and label warnings even after container is emptied. Residual vapors in empty containers may explode on ignition - DO NOT cut, drill, grind, or weld on or near container.

14. TRANSPORT INFORMATION

Proper shipping name: Adhesives *
Technical name : N/A
Hazard class : 3
UN number: 1133
Packing group: II
Emergency Response Guide no.: 128
IMDG page number: N/A
Other: Containers < 30 liters are PG III

*Depending upon the size and type of container, this material may be reclassified as "Consumer Commodity, ORM-D" for shipments within the United States, or "Limited Quantity" elsewhere. Refer to the appropriate regulation.

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

D001

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Methacrylate esters	No	No	0.0	Not required
Methacrylic acid	No	No	0.0	Not required
Methyl Methacrylate Monomer	No	Yes	1000.0	Required
N,N-Dimethyl-para-toluidine	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Delayed health hazard -- Fire hazard -- Reactivity hazard -

Canadian regulations

WHMIS hazard class(es) : B2; D2B

Regulatory notes:

In normal use, the methyl methacrylate in this product is polymerized during cure. For purposes of air quality regulations, the maximum amount of VOC (i.e. MMA) emitted is negligible (less than 10%). Actual emissions are a function of substrate and process and should be considered on an individual basis.

16. OTHER INFORMATION

**Hazardous Materials
Identification System (HMIS)
ratings:**

Health
2*

Flammability
3

Reactivity
2

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.

MA420FS ACTIVATOR

This product appears in the following stock number(s):

IT800 IT805

Last revised: 07/08/1999

Printed: 11/27/2001

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Tradename:** MA420FS ACTIVATOR**General use:** This information applies only to the activator intended for use with ITW A0420FS Adhesive. After proper mixing and curing, the product is not hazardous.**Chemical family:** Organic peroxide solution**MANUFACTURER**ITW Plexus
30 Endicott St.
Danvers, Massachusetts 01923**EMERGENCY INFORMATION****Emergency telephone number**
(CHEMTREC): (800) 424-9300
Other Calls: (978) 777-1100**2. COMPOSITION/INFORMATION ON INGREDIENTS****HAZARDOUS CONSTITUENTS****Exposure limits**

Constituent	Abbr.	CAS No.	Weight percent	ACGIH TLV	OSHA PEL	Other Limits
Butyl benzyl phthalate	BBP	85687	5-15	n/e	n/e	5 mg/m ³
Benzoyl peroxide	BPO	94360	10-30	5 mg/m ³	5 mg/m ³	5 ppm (Canada)
Long chain alcohols, carboxylic acid ester		*	1-10	n/e	n/e	n/e

"TLV" means the Threshold Limit Value exposure (eight-hour, time-weighted average, unless otherwise noted) established by the American Conference of Governmental Industrial Hygienists. "STEL" indicates a short-term exposure limit. "PEL" indicates the OSHA Permissible Exposure Limit. "n/e" indicates that no exposure limit has been established. An asterisk (*) indicates a substance whose identity is a trade secret of our supplier and unknown to us.

3. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance, form, odor: Blue paste with little odor.

CAUTION! Eye and skin irritant.**Potential health effects****Primary routes of exposure:** Skin contact Skin absorption Eye contact Inhalation Ingestion**Symptoms of acute overexposure:****Skin:** No acute effects reported for benzoyl peroxide at this dilution, although the pure peroxide can cause dermatitis.**Eyes:** May cause mild irritation.

Inhalation:

Unlikely because of low vapor pressure of the mixture. Pure benzoyl peroxide causes respiratory irritation.

Ingestion:

May cause irritation of the gastrointestinal tract.

Effects of chronic overexposure:

Pure benzoyl peroxide is reported to be an allergen.

Carcinogenicity -- OSHA regulated: No

ACGIH: No

National Toxicology Program: No

International Agency for Research on Cancer: No

Cancer-suspect constituent(s) : None

Medical conditions which may be aggravated by exposure:

None reported

4. FIRST AID MEASURES**First aid for eyes:**

Flush eye with clean water for at least 15 minutes while gently holding eyelids open. Get immediate medical attention.

First aid for skin:

Wash thoroughly with soap and warm water. Consult a physician if irritation develops.

First aid for inhalation:

Remove patient to fresh air. Administer oxygen if breathing is difficult. Get medical attention.

First aid for ingestion:

Do not induce vomiting. If patient is conscious, dilute by giving water. Get prompt medical attention.

5. FIRE FIGHTING MEASURES**General fire and explosion characteristics:**

Decomposition products can be flammable. Self accelerating decomposition temperature is 129 F (estimated).

Extinguishing media:

Water

Carbon dioxide

Dry chemical

Foam

Alcohol foam

Flash Point (°F): n/a

Method: (No flashpoint method for peroxides)

Explosive limits in air (percent) -- Lower: n/d

Upper: n/d

Special firefighting procedures:

If large amounts of material are involved, evacuate area and fight fire from safe distance. Cool fire-exposed containers with water.

Unusual fire and explosion hazards:

Benzoyl peroxide can decompose violently if heated strongly while confined.

Hazardous products of combustion:

Carbon monoxide and carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES**Spill control:**

Evacuate area; eliminate ignition sources; wear protective clothing and overshoes.

Containment:

Dike, contain and absorb with clay, sand or other suitable material.

Cleanup:

Absorb spill on inert material such as vermiculite and transfer with nonsparking tools to impervious container.

Special procedures:

Prevent spill from entering drainage/sewer systems, waterways, and surface waters. Notify appropriate authorities as required.

7. HANDLING AND STORAGE**Handling precautions:**

- Use nonsparking equipment.
- Do not get in eyes, on skin, or on clothing.
- Avoid breathing vapors.
- Use only as directed; avoid uncontrolled mixing with other materials, especially polymerizable or combustible materials.

Storage:

- Keep well closed in a cool, dark place. Storage above 100 F will reduce useful life of the material.
- Keep from heat, sparks, and open flame. Exposure to high heat can cause violent reaction.
- Do not store near combustibles.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls****Ventilation :**

Local exhaust is recommended for confined areas. General mechanical ventilation is adequate for normal use.

Other engineering controls :

Have emergency eye wash and safety showers in area.

Personal protective equipment**Eye and face protection:**

Safety glasses with side shields.

Skin protection:

Chemical resistant rubber gloves are recommended.

Respiratory protection:

None required at normal handling temperatures.

9. PHYSICAL AND CHEMICAL PROPERTIES

Specific gravity:	1.04	Boiling point (°F):	n/a
Melting point (°F):	0	Vapor density (air = 1):	n/d
Vapor pressure (mmHg):	n/d at 0 °F	Evaporation rate (butyl acetate = 1):	<<1
VOC (grams/liter):	n/d	Solubility in water:	Slight
Percent volatile by volume:	<4	pH (5% solution or slurry in water):	Neutral
Percent solids by weight:	>96		

10. STABILITY AND REACTIVITY

This material is chemically unstable. Hazardous polymerization will not occur.

Conditions to avoid :

Heat, spark, open flame, contamination, and friction

Incompatible materials:

Strong acids and bases, strong oxidizers, amines, polymerization accelerators.

Hazardous products of decomposition:

Flammable and toxic fumes including organic acids; carbon monoxide and carbon dioxide from complete combustion

Conditions under which hazardous polymerization may occur:

None

11. TOXICOLOGICAL INFORMATION

Acute oral effects: LD50 (rat): > 5000 mg/kg

BPO: slightly toxic to practically non-toxic to rats.

Acute dermal effects: LD50 (rabbit): No data available.

BPO: non-irritating to rabbits (4-hr exposure). Repeated controlled human skin contact studies produced skin allergy.

Acute inhalation effects: LC50 (rat): No data available.

Exposure: 4 hours.

BPO: practically non-toxic to rats (LC50 > 22.4 mg/L, 4-hr)

Eye irritation:

BPO: severely irritating to rabbits.

Subchronic effects:

Not available

Carcinogenicity, teratogenicity, and mutagenicity:

BPO: both positive and negative (mutagenic and non-mutagenic) responses occurred in tests with animal or bacterial cells. Repeated skin application with a known carcinogen enhanced skin tumor production in mice by the carcinogen.

Other chronic effects:

BPO: Rats fed dose of 2800 mg/kg for 2-yrs showed increase incidence of testicular atrophy.

Toxicological information on hazardous chemical constituents of this product:

Constituent	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 4hr, (rat)
Butyl benzyl phthalate	2330 mg/kg	>10 mg/kg	n/d
Benzoyl peroxide	7710 mg/kg	n/d	n/d
Long chain alcohols, carboxylic acid ester	n/d	n/d	n/d

'n/d' = 'not determined'

12 ECOLOGICAL INFORMATION**Ecotoxicity:**

BPO: 96 hr, LC50 guppy (semi-static) = 2.0 mg/l, moderately toxic.

Mobility and persistence:

BPO: almost 60 % biodegradadation was reached after 28 days in the closed bottle ready biodegradability test.

Environmental fate:

BPO: EC50 = 35 mg/L absorbed to gel for activated sludge respiration inhibition.

13. DISPOSAL CONSIDERATIONS

Please see also Section 15, Regulatory Information.

Waste management recommendations:

Dispose of in accordance to applicable federal, state, and local regulation. Incineration or fuel blending are the preferred methods of disposal.

14. TRANSPORT INFORMATION

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s.

Technical name : Butyl Benzyl Phthalate

Hazard class : 9

UN number: 3082

Packing group: III

Emergency Response Guide no.: 171

IMDG page number: N/A

Other: RQ=650 lbs (< 650 lbs is non-regulated ground & air). Marine pollutant.

15. REGULATORY INFORMATION**U.S. Federal Regulations****TSCA**

All ingredients of this product are listed, or are exempt from listing, on the TSCA inventory.

The following RCRA code(s) applies to this material if it becomes waste:

None

Regulatory status of hazardous chemical constituents of this product:

Constituent	Extremely Hazardous*	Toxic Chemical**	CERCLA RQ (lbs)	TSCA 12B Export Notification
Butyl benzyl phthalate	No	No	100.0	Required
Benzoyl peroxide	No	Yes	0.0	Not required
Long chain alcohols, carboxylic acid ester	No	No	0.0	Not required

*Consult the appropriate regulations for emergency planning and release reporting requirements for substances on the SARA Section 301 Extremely Hazardous Substance list.

**Substances for which the "Toxic Chemical" column is marked "Yes" are on the SARA Section 313 list of

Toxic Chemicals, for which release reporting may be required. For specific requirements, consult the appropriate regulations.

For purposes of SARA Section 312 hazardous materials inventory reporting, the following hazard classes apply to this material: - Immediate health hazard -- Reactivity hazard -

Canadian regulations

WHMIS hazard class(es) : D2B

Regulatory notes:

In normal use, the methyl methacrylate in this product is polymerized during cure. For purposes of air quality regulations, the maximum amount of VOC (i.e. MMA) emitted is negligible (less than 10%). Actual emissions are a function of substrate and process and should be considered on an individual basis.

16. OTHER INFORMATION

Hazardous Materials Identification System (HMIS) ratings:	Health	Flammability	Reactivity
	1	2	2

Revisions for this issue:

MSDS section	Revisions
2	Updated constituents

The information and recommendations in this document are based on the best information available to us at the time of preparation, but we make no other warranty, express or implied, as to its correctness or completeness, or as to the results of reliance on this document.