



Factor II, Incorporated

P.O. Box 1339
Lakeside, AZ 85929

Phone: (928) 537-8387
Fax: (928) 537-0893

MATERIAL SAFETY DATA SHEET A-588-1 or 2 Part A

In Case of Emergency Contact Factor II, Inc. 928-537-8387

Factor II Technology urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to the use and understanding of the data contained in this MSDS.

To promote safe handling each customer or recipient should: (1) notify and furnish its employees, agents, contractors, customers, and others whom it knows or believes will use this material of the information regarding hazards or safety; (2) request its customers to notify their employees, customers and other users of the product of this information.

1. CHEMICAL PRODUCT

PRODUCT NAME: A-588 Part A
CHEMICAL NAME: N/A
CHEMICAL FAMILY: Silicone
FORMULA: Proprietary
MOLECULAR WEIGHT: N/A
SYNONYMS: N/A
CAS#: Mixture

2. HAZARDOUS INGREDIENTS

%	MATERIAL	CAS#	EXPOSURE VALUE	CLASSIFICATION
5	Silica, amorphous	07631-86-9	See Section 8	See Section 7

3. HAZARDS IDENTIFICATION

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

Small amounts transferred to the mouth by fingers during use, etc., should not injure. Swallowing large amounts may cause digestive discomfort.

SKIN ABSORPTION:

No evidence of adverse effects from available information.

INHALATION:

No evidence of adverse effects from available information.

SKIN CONTACT:

No evidence of adverse effects from available information.



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EYE CONTACT:

Direct contact may cause temporary discomfort with mild redness, dryness, and irritation.

EFFECTS OF REPEATED OVEREXPOSURE:

No injury from silica or dust should occur during reasonable use. If use creates respirable particles, some respiratory system injury may occur. However, since the silica in this product is compounded into the polymer matrix, it is not expected to present the same hazards as neat silica.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE

None currently known.

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING:

No emergency care anticipated.

SKIN:

Wash with soap and water.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

EYES:

Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention if discomfort persists.

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. NOTE: Do not induce vomiting. Emesis of this material may prove difficult due to its high viscosity. Aspiration may cause lung damage.

5. FIRE FIGHTING MEASURES

FLASH POINT (test method(s): >275°F (Cleveland Open Cup)

FLAMMABLE LIMITS IN AIR (by volume):

LOWER: N/A UPPER: N/A



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EXTINGUISHING MEDIA:

Apply alcohol-type or universal-type foams by manufacturers' recommended techniques for large fires. Use water spray, carbon dioxide, or dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES:

Do not direct a solid stream of water or foam directly into a pool of hot, burning liquid as this may cause frothing, and may intensify the fire. Use self-contained breathing apparatus when fighting fire in an enclosed area.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

This product contains polydimethylsiloxane which can generate formaldehyde as a byproduct of oxidative thermal decomposition at temperatures greater than 150°C (300°F). See Section 10 for further information.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal.

WASTE DISPOSAL METHOD: Dispose of in accordance with all Federal, State, and local regulations.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Normal precautions common to safe manufacturing practice should be followed in handling and storage.

Store below 90°F

Keep container closed, in a cool dry place

Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE VALUES AND SOURCE:

Silica, amorphous: 10mg/m³-8 hours TWA (ACGIH,)
 6 mg/m³-8 hours TWA (OSHA, NIOSH)

RESPIRATORY PROTECTION:

Use NIOSH approved respirator or self-contained breathing apparatus as needed to maintain personal exposure below established Occupational Exposure Values.

VENTILATION: General (mechanical) room ventilation with local ventilation as needed to maintain exposure below established Occupational Exposure Values.

PROTECTIVE GLOVES: PVC-coated.

EYE PROTECTION: Use safety goggles.



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OTHER PROTECTIVE EQUIPMENT: Eye bath and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES (based on typical material)

BOILING POINT: N/A
SPECIFIC GRAVITY (H₂O=1): 1.1
FREEZING POINT: N/A
VAPOR PRESSURE, N/A
VAPOR DENSITY (air=1): N/A
EVAPORATION RATE (Butyl Acetate=1): N/A
SOLUBILITY IN WATER (By wt): Insoluble
APPEARANCE: Translucent
ODOR: Odorless
PHYSICAL STATE: Liquid
PERCENT VOLATILES (by wt): See Section 15

Note: The above information is not intended for use in preparing product specifications.

10. STABILITY AND REACTIVITY DATA

STABILITY: Stable.

CONDITIONS TO AVOID: None

INCOMPATIBILITY: Oxidizing materials can cause a reaction.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce carbon monoxide, carbon dioxide, oxides of silicon, and hydrocarbons. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

Traces of formaldehyde may be generated due to oxidative thermal decomposition at temperatures greater than 150°C (300°F). Exposure to formaldehyde can cause adverse effects such as skin and respiratory sensitization and eye and throat irritation. Formaldehyde is a potential carcinogen. Evaluate and control exposure to formaldehyde when warranted by conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

COMPONENT:

Acute Oral LD ₅₀ (mg/kg):	500-5000 (Rat) Inferred from ingredient hazard(s)
Acute Dermal LD ₅₀ (mg/kg):	1000-2000 (Rbt.) Inferred from ingredient hazard(s)
Acute Inhalation LC ₅₀ (mg/l):	2-20 (Rat) Inferred from ingredient hazard(s)
Other:	N/A.
Ames Test:	N/A.

Refer to Section 3 for further discussion of the health hazards associated with this preparation.



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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Complete information not yet available.
CHEMICAL FATE INFORMATION: Complete information not yet available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all Federal, State, and local regulations.

14. TRANSPORT INFORMATION

I.A.T.A. HAZARD CLASSIFICATION: None (not regulated).

15. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:
The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations.
Trade Secrets are indicated by "TS".

C H I P REGULATIONS

Chemicals (Hazards Information and Packaging) Regulations 1993 requires physical-chemical and health hazard determination of all substances and preparations manufactured, transported, stored, modified, or consumed within the EEC. Components present in this product at a level, which could require reporting under the statute, are:

****NONE ****

FEDERAL EPA

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at a level, which could require reporting under the statute are:

****NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 304, 3~ 1, and 312). Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 3 ~ 3). This information must be included in all MSD S's that are copied and distributed for this material. Components present in this product at a level which could require reporting under this statute are:

*** NONE****

INVENTORY STATUS

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



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STATE-RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains no levels of listed substances, which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute.

MASSACHUSETTS 105 CMR 670.000 Right-To-Know, Substance List (MSL)

Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

PENNSYLVANIA Right-To-Know, Hazardous Substance List

Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

MATERIAL
Silica, amorphous

CAS NUMBER
07631-86-9

UPPER BOUND
CONCENTRATION
25%

CALIFORNIA SCAQMD RULE 443.1 VOC'S:

Volatile Organic Components (VOC's) = Substances with vapor pressure of > 0.5 mm Hg at 140°C (219.2°F).
This product contains < 1 % by weight VOC's.

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: Fire Hazard
 Immediate Health Hazard

C.H.I.P. Regulations:

Designation: **A-588**
Symbol: N/A
Indication of Danger: N/A
Safety Phrases: S3/S7/S 8/S24/S25/S4 I
(Ref. Sect. 7)

16. OTHER INFORMATION

HMIS FORMAT:

Health: 1

Flammability: 1

Reactivity: 0

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet, and is offered in good faith. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of Factor II Technology, it is the user's obligation to determine the conditions of safe use of the product.
Factor II Technology Regulatory Compliance Department



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MATERIAL SAFETY DATA SHEET A-588-1 or 2 Part B

Factor II Technology urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to the use and understanding of the data contained in this MSDS.

To promote safe handling each customer or recipient should: (1) notify and furnish its employees, agents, contractors, customers, and others whom it knows or believes will use this material of the information regarding hazards or safety; (2) request its customers to notify their employees, customers and other users of the product of this information.

1. CHEMICAL PRODUCT

PRODUCT NAME: A-588 Part B
CHEMICAL NAME: N/A
CHEMICAL FAMILY: Pigmented Silicone
FORMULA: Proprietary
MOLECULAR WEIGHT: N/A
SYNONYMS: N/A
CAS#: Mixture

2. HAZARDOUS INGREDIENTS

%	MATERIAL	CAS#	EXPOSURE VALUE	CLASSIFICATION
15	Silica, amorphous	07631-86-9	See Section 8	See Section 7
30	Dimethyl, Methylhydrogen Siloxane Copolymer	68037-59-2*	None Established	See Section 7

3. HAZARDS IDENTIFICATION

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

Small amounts transferred to the mouth by fingers during use, etc., should not injure. Swallowing large amounts may cause digestive discomfort.

SKIN ABSORPTION:

No evidence of adverse effects from available information.

INHALATION:

No evidence of adverse effects from available information.

SKIN CONTACT:

No evidence of adverse effects from available information.

EYE CONTACT:

Direct contact may cause temporary discomfort with mild redness, dryness, and irritation.



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EFFECTS OF REPEATED OVEREXPOSURE:

No injury from silica or dust should occur during reasonable use. If use creates respirable particles, some respiratory system injury may occur. However, since the silica in this product is compounded into the polymer matrix, it is not expected to present the same hazards as neat silica.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

None currently known.

OTHER EFFECTS OF OVEREXPOSURE

None currently known.

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING:

No emergency care anticipated.

SKIN:

Wash with soap and water.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

EYES:

Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention if discomfort persist.

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. NOTE: Do not induce vomiting. Emesis of this material may prove difficult to its high viscosity. Aspiration may cause lung damage.

5. FIRE FIGHTING MEASURES

FLASH POINT (test method(s): >140°F/>60° F (Tag Closed Cup)

FLAMMABLE LIMITS IN AIR (by volume):

LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA:

Apply alcohol-type or universal-type foams by manufacturers' recommended techniques for large fires. Use water spray, carbon dioxide, or dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES:

QA-MSDS-07

Revised 3/14/2007



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Do not aim extinguisher stream of water or foam directly into a pool of hot, burning liquid as this may cause frothing, and may intensify the fire. Use self-contained breathing apparatus when fighting fire in an enclosed area.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Do not extinguish fires with water. Contact with water may cause release of H₂ gas, which is highly flammable.

Material vapors are heavier than air and can travel along the ground to remote ignition sources.

This product contains polydimethylsiloxane which can generate formaldehyde as a byproduct of oxidative thermal decomposition at temperatures greater than 150°C (300°F). See Section 10 for further information.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal.

WASTE DISPOSAL METHOD: Dispose of in accordance with all Federal, State, and local regulations.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Normal precautions common to safe manufacturing practice should be followed in handling and storage.

Keep container closed, in a cool dry place	S3/S7/S8
Avoid contact with skin and eyes	S24/S25
In case of fire, do not breathe fumes	S41
Flammable and contact with water liberates flammable gasses	R10/R15

WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor / air contact time, and are influenced by pressure changes.

Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs.

Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE VALUES AND SOURCE:

Silica, amorphous: 10mg/m³-8 hours TWA (ACGIH,)
6 mg/m³-8 hours TWA (OSHA, NIOSH)

RESPIRATORY PROTECTION:

Use NIOSH approved respirator or self-contained breathing apparatus as needed to maintain personal exposure below established Occupational Exposure Values.

VENTILATION: General (mechanical) room ventilation with local ventilation as needed to maintain exposure below



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established Occupational Exposure Values.

PROTECTIVE GLOVES: PVC-coated.

EYE PROTECTION: Use safety goggles.

OTHER PROTECTIVE EQUIPMENT: Eye bath and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES (based on typical material)

BOILING POINT: N/A

SPECIFIC GRAVITY (H₂O=1): 1.10

FREEZING POINT: N/A

VAPOR PRESSURE, <5 mm Hg

VAPOR DENSITY (air=1): N/A

EVAPORATION RATE (Butyl Acetate=1): N/A

SOLUBILITY IN WATER (By wt): <0.1%

APPEARANCE: Translucent

ODOR: Slight Odor

PHYSICAL STATE: Liquid

PERCENT VOLATILES (by wt): See Section 15

Note: The above information is not intended for use in preparing product specifications.

10. STABILITY AND REACTIVITY DATA

STABILITY: Stable.

CONDITIONS TO AVOID: None

INCOMPATIBILITY: Oxidizing materials can cause a reaction.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce carbon monoxide, carbon dioxide, oxides of silicon, and hydrocarbons. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

Traces of formaldehyde may be generated due to oxidative thermal decomposition at temperatures greater than 150°C (300°F). Exposure to formaldehyde can cause adverse effects such as skin and respiratory sensitization and eye and throat irritation. Formaldehyde is a potential carcinogen. Evaluate and control exposure to formaldehyde when warranted by conditions of use.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

COMPONENT:

Acute Oral LD ₅₀ (mg/kg):	500-5000 (Rat) Inferred from ingredient hazard(s)
Acute Dermal LD ₅₀ (mg/kg):	1000-2000 (Rbt.) Inferred from ingredient hazard(s)
Acute Inhalation LC ₅₀ (mg/l):	2-20 (Rat) Inferred from ingredient hazard(s)



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Other: N/A.
Ames Test: N/A.

Refer to Section 3 for further discussion of the health hazards associated with this preparation.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Complete information not yet available.
CHEMICAL FATE INFORMATION: Complete information not yet available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all Federal, State, and local regulations.

14. TRANSPORT INFORMATION

I.A.T.A. HAZARD CLASSIFICATION: None (not regulated).

15. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

CHIP REGULATIONS

Chemicals (Hazards Information and Packaging) Regulations 1993 requires physical-chemical and health hazard determination of all substances and preparations manufactured, transported, stored, modified, or consumed within the EEC. Components present in this product at a level, which could require reporting under the statute, are:

****NONE ****

FEDERAL EPA

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at a level, which could require reporting under the statute are:

****NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 304, 3~ 1, and 312). Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 3 ~ 3). This information must be included in all MSD S's that are copied and distributed for this material. Components present in this product at a level which could require reporting under this statute

*****NONE*****

INVENTORY STATUS

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

STATE-RIGHT-TO-KNOW

