



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name 41000

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Ceramic Fiber Reinforced Flowable Putty

Details of the Supplier of the Safety Data Sheet

Supplier's details

DBF, Inc.
18576 Krause
PO Box 2385
Riverview, MI 48193
Phone: 734-285-1480

24 Hour Emergency Telephone Number Chemtrec 800-424-9300 (North America) 1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Classification

Flammable Liquids	Category 3
Acute Toxicity: Inhalation	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure) [Respiratory tract irritation]	Category 3
Specific target organ toxicity (repeated exposure) Inhalation [ears]	Category 1
Specific target organ toxicity (repeated exposure) [liver and nervous system]	Category 2



Signal Word

Danger

Hazard Statements

Flammable liquid and vapor
Harmful if inhaled
Causes serious eye irritation
Causes skin irritation
Suspected of causing cancer
May cause respiratory irritation.
Causes damage to organs through prolonged or repeated exposure (ears)
May cause damage to organs through prolonged or repeated exposure. (liver, nervous system)

Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection/face protection
 Keep away from heat, sparks, open flames and hot surfaces – No smoking.
 Use explosion proof electrical, ventilating, lighting, and all material handling equipment.
 Use only non-sparking tools. Take precautionary measures against static discharge.
 Use outdoors or in well-ventilated area. Keep container tightly closed.
 Do not breathe dust/fume/gas/mist/vapors/spray.
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

Get medical attention if you feel unwell.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for several minutes. If eye irritation persists: Get medical attention
 IF ON SKIN (or hair): Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention.
 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Precautionary Statements - Storage

Store containers in a safe place. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Precautionary Statements - Disposal

Dispose of contents/container in accordance with all local, regional, national and international regulations.
 Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Ceramic Fibers	13983-17-0	<35
Unsaturated Polyester Polymer	Mixture	<40
Styrene	100-42-5	<18
Talc	14807-96-6	<10

4. FIRST AID MEASURES

First Aid Measures

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	Immediately flush with plenty of water for at least 10 minutes occasionally lifting upper and lower eyelids. Check for and remove contacts lenses. Get medical attention.
Skin Contact	Flush contaminated skin with plenty of water for at least 10 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Clean shoes thoroughly before use.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. 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.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure of if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain and open airway. Loosen tight clothing such as collar, tie, belt or waistband.

Most Important Symptoms and Effects, both Acute and Delayed**Potential acute health effects**

Eye contact	Causes serious eye irritation.
Inhalation	Harmful if inhaled. May cause respiratory irritation.
Skin contact	Causes skin irritation.
Ingestion	Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye Contact	Adverse symptoms may include the following: pain or irritation, watering, redness.
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing.
Skin contact	Adverse symptoms may include the following: irritation, redness.
Ingestion	No specific data.

Indication of any Immediate Medical Attention and Special Treatment Needed, if necessary

Note to Physicians	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO2, water spray (fog) or foam.
Unsuitable Extinguishing Media	Do not use water jet.
Specific Hazards Arising from the chemical	Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of subsequent explosion.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide, carbon monoxide.
Special protective actions for firefighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for firefighters	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

- For non-emergency personal** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergence personnel".
- Environmental Precautions** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform relevant authorities if the product has environmental pollution (sewers, waterways, soil or air)

Methods and Material for Containment and Cleaning Up

- Small spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Scoop into appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling

- Protective measures** Put on appropriate protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Empty containers retain product residue and can be hazardous. Do not reuse containers.
- Advice on general Occupational hygiene** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for Safe Storage, Including any Incompatibilities** Do not store above 38°C (100.4°F). Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Store in original container protected from direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control measures

Occupational exposure limits

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
Styrene	TWA: 20 ppm 8 hours TWA: 85 mg/m ³ 8 hours STEL: 40 ppm 15 minutes STEL: 170 mg/m ³ 15 minutes	TWA: 100 ppm 8 hours CEIL: 200 ppm AMP: 600 ppm 5 minutes	TWA: 50 ppm 10 hours TWA: 215 mg/m ³ 10 hours STEL: 100 ppm 15 minutes STEL: 425 mg/m ³ 15 minutes
Talc	TWA: 2 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	(vacated) TWA: 2 mg/m ³ respirable dust <1% Crystalline silica, containing no Asbestos TWA: 20 mppcf if 1% Quartz or more use Quartz limit	IDLH: 1000 mg/m ³ TWA: 2 mg/m ³ containing no Asbestos and <1% Quartz respirable dust
Ceramic Fiber	-	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction	-

Appropriate Engineering Controls Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of the environmental protection legislation.

Individual Protection Measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gasses or dusts.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respiratory selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Property	The physical-chemical properties of this material have not been fully investigated.	
Physical State	Liquid	
Appearance	Light gray paste	
Color	Light gray	
Odor	Styrene	
Odor Threshold	.01 to .1 ppm	
pH	Not determined	
Melting Point	Not determined	
Boiling Point	145.2°C (293.4°F)	(For unsaturated polyester resin)
Flash Point	31.1°C (88°F)	(Closed Cup)
Evaporation Rate	Less than 1	(for styrene) (Butyl Acetate=1)
Upper Flammability Limits	6.1%	
Lower Flammability Limit	1.1%	
Vapor Pressure	0.57 kPa (4.3 mmHg)	(room temperature) (for styrene)
Vapor Density	3.6	(for Styrene) (Air = 1)
Specific Gravity	0.93 to 0.99	
Solubility in water	Insoluble	
Solubility in Other Solvents	Not available	
Partition Coefficient	Not determined	
Auto-ignition Temperature	490°C (914°F)	(for styrene)
Decomposition Temperature	Not available	Low stability hazard expected at normal operating temperatures
Viscosity	Not determined	
Styrene loss after catalyzing	Less than .1%	When used as intended.

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The Product is stable.
Possibility of hazardous_reactions	Hazardous reactions or instability may occur under certain conditions or storage or use.
Conditions to Avoid	Avoid all possible sources of ignition (spark and flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat and flame. Hazardous polymerization may occur under certain conditions of storage our use. Keep away from heat and direct sunlight. Keep away from heat and flame. Keep away from oxidizing agents.
Incompatible Materials	Reactive or incompatible with the oxidizing materials, acids, and alkalis. Incompatible with alkali metals, some alkalis, and some strong acids.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Styrene	LC50 Inhalation Gas	Rat	2770 ppm	4 hours
	LC50 Inhalation Vapor	Rat	11800 mg/m ³	4 hours
	LD50 Oral	Rat	2650 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Styrene	Eyes – Mild irritant	Human	-	50 ppm	-
	Eyes – Moderate Irritant	Rabbit	-	24 hours 100 mg	-
	Eyes – Severe Irritant	Rabbit	-	100 mg	-
	Skin – Mild irritant	Rabbit	-	500 mg	-
	Skin – Moderate irritant	Rabbit	-	100 Percent	-

Sensitization

May cause skin sensitization by skin contact.

Mutagenicity

Not Available.

Carcinogenicity

Not Available.

Conclusion/Summary

Styrene manufacturers have determined that the weight of evidence for the carcinogenicity of this substance does not meet the criteria for classification.

Styrene is listed by IARC as a possible carcinogen to humans (Group 2B) based on "limited evidence" in humans, "limited evidence in animals and "other relevant data". The United States NTP listed styrene as reasonably anticipated to be a human carcinogen based on "limited evidence" from studies in humans, "sufficient evidence" from studies in experimental animals, and supporting data on mechanisms of carcinogenesis. The significance of these results for humans has not been established through risk assessment.

Classification

Product/ingredient name	OSHA	IARC	NTP
Styrene	-	2B	Reasonably anticipated to be a human carcinogen.
Talc	-	3	-
2-phenylpropene	-	2B	-

Reproductive toxicity

Not available

Teratogenicity

Not available

Specific target organ toxicity (single exposure)

Name	Category	Routes of exposure	Target Organs
Styrene	Category 3	Not applicable	Respiratory tract irritation
2-phenylpropene	Category 3	Not applicable	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Routes of exposure	Target Organs
Styrene	Category 1	Inhalation	ears

Aspiration hazard

Name	Result
Styrene	Aspiration Hazard – Category 1

Information on the likely routes of exposure Not available

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	Harmful if inhaled. May cause respiratory irritation.
Skin contact	Causes skin irritation.
Ingestion	Irritation to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain, or irritation, watering, redness.
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing.
Skin contact	Adverse symptoms may include the following: irritation, redness.
Ingestion	Adverse symptoms may include the following: irritating to mouth, throat and stomach.

Delayed and immediate effects and also chronic effects from short and long-term exposure**Short term exposure**

Potential immediate effects	Not available
Potential delayed effects	Not available

Long term exposure

Potential immediate effects	Not available
Potential delayed effects	Not available

Potential chronic health effects

General	Causes damage to organs through prolonged or repeated exposure if inhaled.
Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Route	ATE value
Oral	2575.6 mg/kg
Inhalation (gases)	3838.7 ppm
Inhalation (vapors)	16.35 mg/l

12. ECOLOGICAL INFORMATION

Toxicity

Product /ingredient name	Result	Species	Exposure
Styrene	Acute EC50 1400 ug/l Fresh water	Algae – Pseudokirchneriella subcapitata	72 hours
	Acute EC50 720 ug/l Fresh water	Algae – Pseudokirchneriella subcapitata	96 hours
	Acute EC50 4700 ug/l Fresh water	Daphnia – Daphnia magna	48 hours
	Acute LC50 52000 ug/l Marine water	Crustaceans – Artemia salina – Nauplii	48 hours
	Acute LC50 4020 ug/l Fresh water	Fish – Pimephales promelas	96 hours
	Chronic NOEC 63 ug/l Fresh water	Algae – Pseudokirchneriella subcapitata	96 hours
Talc	LC50 100 g/l semi – static	Brachydanio rerio	96 hour

Persistence and Degradability Not determined

Bioaccumulative potential

Product/ingredient	LogP _{ow}	BCF	Potential
Styrene	0.35	13.49	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available

Other adverse effects No known significant effects of critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid disposal. Attempt to use product completely in accordance with intended. Waste packaging should be recycled. Incineration or landfill should be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

DOT

UN/ID No	UN1866
Proper Shipping Name	Resin Solution
Hazard Class	3
Packing Group	III
Reportable Quantity (RQ)	1000 lbs (Styrene)

IATA

UN/ID No	UN1866
Proper Shipping Name	Resin Solution
Hazard Class	3
Packing Group	III

IMDG

UN/ID No	UN1866
Proper Shipping Name	Resin Solution
Hazard Class	3
Packing Group	III

15. REGULATORY INFORMATION

U.S. Feral regulations

TSCA 8(a) Pair	4-tert-butylpyrocatechol; N,N-dimethylaniline; bornan-2-one; cinnamaldehyde; Poly(oxy-1,2-ethandediyl), α -[4-(1,1,3,3-tetramethylbutyl)phenyl]- ω -hydroxy-; triethyl phosphate
TSCA 8(a) CDR Exempt/Partial exempt:	Not determined.
TSCA 8(c) calls for record of SAR:	Triethyl phosphate
United States inventory (TSCA 8b):	All components are listed or exempted.
Clean Water Act (CWA) 307:	Naphthenic acids, copper salts, ethylbenzene
Clean Water Act (CWA) 311:	Styrene; ethylbenzene; xylene
Clean Air Act Section 112 (b) Hazard Air Pollutants (HAPs)	Styrene
Clean Air Act Section 602 Class I Substances	Not listed
Clean Air Act Section 602 Class II Substances	Not listed

SARA 302/304

No Products found

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

SARA 313

Chemical Name	CAS No	Weight-%
Styrene	100-42-5	<18

State Regulations**U.S. State Right-to-Know Regulations**

Massachusetts	Styrene monomer; Talc
New York	Styrene
New Jersey	Styrene monomer; Benzene, Ethenyl-; Talc
Pennsylvania	Benzene, Ethenyl-; Talc

California Proposition 65

WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm: Styrene, Ethylbenzene.

International lists

Australia inventory (AICS)	Not determined.
Canadian inventory	Not determined.
China inventory (IECSC)	Not determined.
Japan inventory	Not determined.
Korea Inventory	Not determined.
Malaysia Inventory (EHS Register)	Not determined.
New Zealand Inventory of Chemicals (NZIoC)	Not determined.
Philippines inventory (PICCS)	Not determined.
Taiwan inventory (CSNN)	Not determined.

16. OTHER INFORMATION

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	2	3	1	Not determined
HMIS	Health Hazards	Flammability	Physical Hazards	Personal Protection
	2	3	1	Not determined

Revision Date 18-May-2017
Revision Notes

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet