SAFETY DATA SHEETS

This SDS packet was issued with item:

077316623

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

077316631

MATERIAL SAFETY DATA SHEET

(Revision: 06/01/2011)

1. Identification of the Substance/Preparation and of the Company/Undertaking.

- Product Type: Phosphate Investment Casting Liquid

Trade Names:

Ceramigold Lilac Liquid	**FastFire Liquid**	**Formula 1 Liquid**
High Expansion Liquid	**Old Style Special Liquid**	**Polyvest Liquid**
PowerPlus Liquid	**Special Liquid Concentrate**	**SpaceMaker Liquid**
Special Liquid Concentrate Max	**Special Liquid Concentrate Plus**	**Ti21 Liquid**

- Company:

Whip Mix Corporation
361 Farmington Ave.
Louisville, Kentucky, USA 40209
Emergency Telephone Number: (502)-637-1451
Fax Number: (502) 634-4512

Transportation Emergencies: ***CHEMTREC 1(800) 424-9300 (U.S. and Canada)***
International Calls: 1- 703-527-3887 (Collect calls accepted)

2. Hazard Identification.

- Not a hazardous material.

Personal protective equipment not required during normal laboratory use.

3. Composition/Information on Ingredients.

Substance	*Weight*	*CAS*	*EINECS*	*R*	*Symbols*	*S*
Colloidal Silica (amorphous)	15 - 50%	112926-00-8	231-545-4	None	None	None
* Ethylene Glycol	<9%	107-21-1	203-473-3		None	S2

4. First-Aid Measures.

- This product has no known acute toxic effects which would require emergency first-aid measures.
- For eye contact, rinse with water and call a physician.

5. Fire-Fighting Measures.

- Unusual fire and explosion hazard: Contact with reactive metals (e.g. aluminum) may result in the generation of flammable hydrogen gas.

6. Accidental Release Measures.

- Do not allow liquid to dry. Cleanup with absorbent paper towels.

7. Handling and Storage.

Handling: No special treatment required.
Storage: Keep container closed.

8. Exposure Controls/Personal Protection. Exposure Limits Only If Aerosolized Dried (See below).

- Personal protective equipment: None required during normal laboratory use.
- Primary route(s) of exposure: Eye, skin, inhalation
- Eye contact: Can cause transient irritation.
- Prevent inhalation exposure to excessive dust (if mixture dries out). May result in lung damage.
- Exposure limit to dried dust: 1.6 mg/m^3 as 8 hr TWA.
- Exposure limit: to aerosol of liquid: Ceiling Value of 100mg/m^3 for ethylene glycol.

9. Physical and Chemical Properties.

- Translucent odorless liquid - may be colored

Density	10.3-10.4 lbs/gal
Solubility in water	Dispersible
Specific gravity	1.24-1.25 @ 77°F
pH (neat)	8.4-8.8

Viscosity	Max 6.0 cps @ 77°F
Boiling point	212°F @ 760 mm Hg
Flash point	None

- No dangerous reactions are known to occur with correct handling and storage.

10. Stability and Reactivity.

- Basically stable. Avoid contact with aluminum.

11. Toxicological Information.

- Acute oral toxicity (albino rats): LD_{50} = Greater than 34,000 mg/kg
- Acute dermal toxicity (albino rabbits): LD_{50} = Greater than 10,000 mg/kg
- Primary skin irritation test (albino rabbits): Skin irritation index draize rating: 0.125/8.0 minimally irritating.
- Primary eye irritation test (albino rabbits): eye irritation index draize rating: 4.0/110.0 minimally irritating.
- Inhalation of excessive dust (if the mixture dries out) may result in lung damage.
- Carcinogenicity: Not listed as carcinogen by OSHA, NTP or TARC

12. Ecological Data.

- No ecotoxicological studies are available. See CERCLA section 14, if released into the environment.

13. Disposal Considerations.

- Waste is not hazardous as defined by RCRA (40CFR 2G1)
- No special treatment required.

14. Transport Information.

- No special transport requirements. Product is not regulated during transportation.

15. Regulatory Information.

- OSHA Hazard Communications Standard, 29 CFR 1810.1200: None of the ingredients are hazardous.
- RCRA: This material is not defined as hazardous water, per 40 CFR 261.
- TSCA: These products contain materials listed in the TSCA inventory and is not otherwise regulated by TSCA Sec. 4, 5, 6, 7 or 12.
- CERCLA: Materials not reportable under CERCLA. Local requirements may vary.
- SARA: 311/312 hazard categories - immediate and delayed health, 313 reportable ingredients - none
- Does not contain any chemicals which require warning.

16. Other Information.

- HMIS Rating: Health 1 Flammability 0 Reactivity 2 Other 0
  Hazard: 4-Severe; 3-Serious; 2-Moderate; 1-Slight; 0-Minimum

Prepared By: Donna Ringo, CIH	Translated By:
Date: 6/13/2011	Date:

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SAFETY DATA SHEET
Regulation (EC) No 1907/2006 and 2015/8308 (REACH)

Date Revised: 10/12/2016
Supersedes Date: 03/12/2015

Section 1 Identification of the Substance/Preparation and of the Company/Undertaking.

1.1 Product Identifier
Product Type: Silica preparation
Trade Names: Special Liquid Concentrate

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against
Product Use: Investments for dental appliances
Uses Advised Against: For professional use only.

1.3 Details of the Supplier of the Substance or Mixture

Manufacturer:
Whip Mix Corporation
361 Farmington Avenue
Louisville, Kentucky, USA 40209
Emergency Telephone Number: (502) 637-1451
Fax Number: (502) 634-4512

EU Importer
Whip Mix Europe GmbH
Wißstrasse 26 – 28
D – 44137 Dortmund
Germany
+49 (0) 231 / 567 70 8-0

1.4 Emergency Telephone Number
Transportation Emergencies: CHEMTREC 1(800) 424-9300 (U.S. and Canada)
International Calls: 1- 703-527-3887 (Collect calls accepted)
Medical Emergencies:
Other Product Information: Infor@whipmix.com

Section 2 Hazard Identification

2.1 Classification of the Substance or Mixture:

CLP/GHS Classification (1272/2008):

Health Hazards	Physical Hazards	Environmental Hazards
Specific Target Organ Toxicity Repeated Exposure Category 2 (H373)	Not Hazardous	Not Hazardous

2.2 Label Elements:

Labelling according to Regulation (EC) No 1272/2008 and US OSHA Hazcom 2012 (29 CFR1910.1200)

Warning!

H373 May cause damage to kidneys through prolonged or repeated exposure by ingestion.

P260 Do not breathe mist, vapors or spray.
P314 Get medical attention if you feel unwell.
P501 Dispose of contents and container in accordance with local and national regulations.

2.3 Other Hazards: None

Section 3 Composition/Information on Ingredients.

Substance	***CAS No. / EC Number***	***%***	**CLP/GHS Classification (1272/2008)**
Amorphous Silica	7631-86-9 / 231-545-4	40 – 70	Not hazardous
Ethylene Glycol	107-21-1 / 203-473-3	5 - 10	Acute Tox 4 H302 STOT RE 2 H373

See Section 16 for full text of GHS Classifications.

The exact percentage of composition has been withheld as a trade secret.

Section 4 First-Aid Measures.

4.1 Description of First Aid Measures

Inhalation: Remove exposed person to fresh air. If irritation or other symptoms persist, get medical attention.

Eyes: Flush with large quantities of water for several minutes, holding the eyelids apart. If irritation persists consult a physician.

Skin: No first aid is generally required. Wash skin with soap and water.

Ingestion: If swallowed, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

4.2 Most Important symptoms and effects, both acute and delayed: May cause mild eye irritation. Inhalation of mists may cause mucous membrane and upper respiratory tract irritation. Ingestion may cause gastrointestinal irritation, nausea, dizziness, drowsiness, slurred speech and stupor. Prolonged over exposure to ethylene glycol may cause damage to the kidneys.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical attention should not be required.

Section 5 Fire-Fighting Measures.

5.1 Extinguishing Media: Use media appropriate for surrounding fire.

5.2 Special Hazards Arising from the Substance or Mixture: The product is not flammable or combustible.

5.3 Advice for Fire-Fighters: Firefighters should wear full emergency equipment and approved positive pressure self-contained breathing apparatus.

Section 6 Accidental Release Measures.

6.1 Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing as described in Section 8. Wash hands after use. Avoid breathing vapors or mists.

6.2 Environmental Precautions: Report releases as required by local and national authorities.

6.3 Methods and Material for Containment and Cleaning Up: Collect with an inert material and place in appropriate container for disposal or reuse.

6.4 Reference to Other Sections: Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

Section 7 Handling and Storage.

7.1 Precautions for Safe Handling: Avoid contact with eyes, skin and clothing. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use.

7.2 Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated area away from incompatible materials. Protect from physical damage.

7.3 Specific end use(s):

Industrial uses: None identified

Professional uses: Investments for dental appliances.

Section 8 Exposure Controls/Personal Protection

8.1 Control Parameters:

Amorphous Silica	80 mg/m^3 TWA PEL (total dust) % Silica 10 mg/m^3 TWA Belgium OEL 6 mg/m^3 TWA (Inhalable) UK WEL 2.4 mg/m^3 (Respirable) UK WEL
Ethylene Glycol	100 mg/m^3 Ceiling ACGIH TLV (as aerosol) 20 ppm TWA, 40 ppm STEL EU IOEL 10 ppm TWA, 20 ppm STEL Germany DFG (as aerosol and vapor) 20 ppm TWA, 40 ppm STEL UK WEL

8.2 Exposure Controls:

Recommended Monitoring Procedures: None.

Appropriate engineering controls: Use with adequate local exhaust ventilation to maintain exposures below the occupational exposure limits.

Personal Protective Measurers

Respiratory protection: If the exposure limits are exceeded an approved organic vapor respirator with dust/mist prefilters appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 applicable regulations and good industrial hygiene practice.
Skin protection: For prolonged use, wear rubber gloves.
Eye protection: Chemical safety goggles if needed to avoid eye contact.
Other: Impervious clothing as needed to avoid contamination of personal clothing.

Section 9 Physical and Chemical Properties.

9.1 Information on basic Physical and Chemical Properties

Appearance: White Liquid
Odor: Odorless

Odor threshold: 60.3 mg/m^3 (ethylene glycol)
Melting point/freezing point: 32°F (0°C)
Flash point: Not applicable
Flammability (solid, gas): Not applicable
Flammable limits: LEL: Not applicable
Vapor pressure: 17 mmHg @ 20°C
Relative density: 1.20 g/mL at 20°C
Partition coefficient: n-octanol/water: Not available
Decomposition temperature: Not available
Explosive Properties: Not applicable

pH: 9.5-10.2
Boiling point: 212°F (100°C)
Evaporation rate: Not available

UEL: Not applicable
Vapor density (air = 1): Not available
Solubility In Water: Fully miscible
Auto-ignition temperature: Not applicable

Viscosity: Not applicable
Oxidizing Properties: Not applicable

9.2 Other Information: None available

Section 10 Stability and Reactivity.

10.1 Reactivity: None known.
10.2 Chemical stability: Stable
10.3 Possibility of hazardous reactions: None known.
10.4 Conditions to avoid: None known.
10.5 Incompatible materials: None known.
10.6 Hazardous decomposition products: Thermal decomposition may generate silicon oxides.

Section 11 Toxicological Information.

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eyes: May cause mild irritation.
Skin: May cause mild irritation.
Ingestion: Swallowing may cause gastrointestinal irritation, nausea, dizziness, drowsiness, slurred speech and stupor.
Inhalation: Inhalation of mists may cause irritation to the nose, throat and upper respiratory tract.

Carcinogenicity: None of the components of this product are listed as carcinogens by OSHA, IARC or NTP.
Acute Toxicity Data:
Amorphous Silica: Oral rat LD50 >5000 mg/kg, Inhalation rat LC0 >0.39 mg/L/4 hr., LD50, Dermal rabbit LD50 >2000 mg/kg
Ethylene Glycol: Oral rat LD50 7712 mg/kg; Inhalation rat LC50 >2.5 mg/L/6 hr Dermal rabbit LD50 >3500 mg/kg

Skin Corrosion/Irritation: None of the components are classified as causing skin irritation.
Serious Eye Damage/Irritation: None of the components are classified as causing eye irritation. Once the liquid has evaporated, dust may cause mechanical irritation.
Respiratory or Skin Sensitization: None of the components have been shown to cause skin or respiratory sensitization in animals or humans.
Germ Cell Mutagenicity: None of the components have been shown to cause mutagenicity**.**
Carcinogenicity: None of the components are listed as a carcinogen by IARC, NTP, OSHA or the EU CLP.
Reproductive Toxicity: None of the component are classified as being toxic to reproduction. In a study comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity and developmental toxicity in with minimal evidence of teratogenicity, The no-effects concentration (based on maternal toxicity) was 500 mg/m^3. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen and there is currently no available information to suggest that ethylene glycol caused birth defects in humans.
Specific Target Organ Toxicity:
Single Exposure: None known.
Repeated Exposure: In a 16 week oral study, rats were administered 50, 150, 500 or 1000 mg/kg of ethylene glycol in their diet. After 16 weeks of exposure the renal toxicity was severe enough to impact the kidneys ability to process the ethylene glycol and eliminate it in urine. NOEL 150 mg/kg
Aspiration Hazards: This product does not meet the criteria for aspiration toxicity.

Section 12. Ecological Data.

12.1 Ecotoxicity:
Amorphous Silica: 96 hr. LC50 Danio rerio >10,000 mg/L, 24 hr. EC50 daphnia magna >1000 mg/L, 72 hr. EC50 Desmodesmus subspicatus >10000 mg/L
Ethylene glycol: 96 hr LC50 Pimephales promelas 72,860 mg/L, 48 hr EC50 daphnia magna >100 mg/L, 96 Hr EC50 Pseudokirchneriella subcapitata 6500-13,000 mg/L
12.2 Persistence and degradability: Ethylene glycol is readily biodegradable.
12.3 Bioaccumulative potential: Ethylene glycol has a BCF of 10 which suggest the potential for bioconcentration is low.
12.4 Mobility in soil: No data available
12.5 Results of PBT and vPvB assessment: Not required.
12.6 Other adverse effects: Not required.

Section 13. Disposal Considerations.

13.1 Waste Treatment Methods: Dispose in accordance with all national and local regulations.

Section 14. Transport Information.

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT		Not Regulated			
Canadian TDG		Not Regulated			
EU ADR/RID		Not Regulated			
IMDG		Not Regulated			
IATA/ICAO		Not Regulated			

14.6 Special precautions for User: Not applicable
14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Section 15 Regulatory Information.

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

US Regulations

SARA Section 313 (40 CFR 372): This product contains the following toxic chemical(s) subject to reporting requirements of SARA 313:

Ethylene Glycol 107-21-1 5-10%

SARA Section 311/312 (40 CFR 370) Hazard Categories: Chronic Exposure

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethylene Glycol (10% maximum) of 5,000 lbs., is 50,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations

California: This product contains the following substances known to the state of California to cause cancer and/or reproductive toxicity:

Ethylene glycol 107-21-1 5-10% Developmental

International Chemical Inventories

Australia: All of the components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempt.

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL) or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

European Union: All the components in this product are listed on the EINECS inventory or exempt.

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

Philippines: All of the components of this product are listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS) or exempt.

United States: All of the components of this product are listed on the US Toxic Substances Control Act **(**TSCA) inventory

German WGK: 1

16. Other Information.

HMIS Rating: Health 2* Flammability 0 Reactivity 0
Hazard: 4-Severe; 3-Serious; 2-Moderate; 1-Slight; 0-Minimum

Date Revised: October 12, 2016
Supersedes Date: March 12, 2015
SDS Revision History: New formulation. All Sections revised

CLP/GHS Classification and H Phrases for Reference (See Section 3)
Acute Tox 4 Acute Toxicity Category 4
STOT RE 2 Specific Target Organ Toxicity Repeat Exposure Category 2
H302 Harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure.

Key literature references and sources for data: ECHA database, GESTIS, eChemPortal, TOXNET

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 (CLP): Calculation method

Prepared By: Denise A. Deeds	Translated By:
Date: October 12, 2016	Date: