

SDS no. PID1709
Version 13
Revision date 09/Apr/2018
Supersedes date 29/Mar/2017



Safety Data Sheet VG-PLUS*

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

1.1 Product identifier

Product name VG-PLUS*

Product code PID1709

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive. Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

M-I L.L.C.

P.O.Box 42842

Houston, TX 77242

www.miswaco.slb.com

Telephone: 1 281-561-1511

M-I SWACO, A Schlumberger Company

200 - 125, 9th Avenue SE

Calgary, Alberta T2G 0P6, Canada

Telephone: 1-780-962-8221

Schlumberger Serviços de Petróleo LTDA

Rua Internacional 500Cavaleiro – Macaé, RJ. CEP: 27.930-075

Telephone: +55 22 3311-7051

E-mail address sdsmi@slb.com

Prepared by

Global Regulatory Compliance - Chemicals (GRC - Chemicals)

1.4 Emergency Telephone Number

Emergency telephone (24 Hour) Asia Pacific +65 3158 1074, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, USA +1 281 561 1600, Canada +1 800 579 7421, Argentina: +54 11 5984 3690, Brazil : 0800-720-8000/0800-777-2323 (WGRA)

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS - Classification

Health hazards

Carcinogenicity	Category 1A
Specific target organ toxicity - Repeated exposure	Category 2

Environmental hazards Not classified

Physical Hazards

Combustible dust	Category 1
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2.2 Label elements



Signal word

DANGER

Hazard Statements

H350i - May cause cancer by inhalation

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

H232 - May form combustible dust concentrations in air

Precautionary Statements

P201 - Obtain special instructions before use

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P281 - Use personal protective equipment as required

P308 + P313 - IF exposed or concerned: Get medical advice/attention

P314 - Get medical advice/attention if you feel unwell

P202 - Do not handle until all safety precautions have been read and understood

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment

P243 - Take precautionary measures against static discharge

P501 - Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified

None known

Unknown acute toxicity Not applicable.

3. Composition/information on Ingredients

3.1 Substances

Chemical Name	CAS No	Weight-%
Organophilic clay	Proprietary	60-100
Crystalline silica (impurity)	14808-60-7	< 1

3.2 Mixtures

Not applicable

Comments

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret

Proprietary component(s) in section 3 of this SDS does not/do not trigger application of trade secret exemption under Hazardous Materials Information Review Act (HMIRA). The proprietary component in this product contributes to combustible dust classification.

4. First Aid Measures

4.1 First aid measures

Inhalation	Move to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting without medical advice. Call a physician or Poison Control Center. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.
Eye Contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically
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5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Water Fog, Alcohol Foam, CO₂, Dry Chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

Dusts or fumes may form explosive mixtures in air. Suspended dust may present a dust explosion hazard.

Hazardous combustion products

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke), Silicon oxide, Nitrogen oxides (NOx), Sulphur oxides, Ammonia, Chlorine, chlorine oxides, hydrogen chloride.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment. Evacuate personnel to safe areas. Avoid dust formation. Suspended dust may present a dust explosion hazard. Avoid breathing dust; if exposed to high dust concentration, leave area immediately.

6.2 Environmental precautions

As local regulations may vary; all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations.

Large spills released to the environment may disturb the natural chemical balance of soil/fresh water. Do not allow material to contaminate ground water system.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up

Shovel into suitable container for disposal. Avoid dust formation. Powdered material may form explosive dust-air mixtures. Take precautionary measures against static discharges. Use non-sparking tools and equipment.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Do not handle until all safety precautions have been read and understood. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Wear personal protective equipment. Avoid dust formation. Fine dust dispersed in air may ignite. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions

Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Use spark-proof tools and explosion-proof equipment.

Storage precautions

Protect from moisture Store in original container. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Component Information

Chemical Name	ACGIH TLV	OSHA PEL	Argentina - Occupational Exposure Limits - TWAs (CMPs)	Brazil - Occupational Exposure Limits - TWAs (LTs)	Mexico - Occupational Exposure Limits - TWAs (LMPE-PPTs)
Organophilic clay	Not determined	Not determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.025 mg/m ³	50 µg/m ³ TWA respirable fraction	0.05 mg/m ³ TWA	Not determined	0.1 mg/m ³ TWA VLE-PPT (respirable fraction)

Crystalline silica (impurity)

OSHA - Final PELs - Table Z-3 Mineral Dusts

(250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (10)/(%SiO₂ + 2) mg/m³ TWA, respirable fraction

IDLH (Immediately Dangerous to Life or Health)

This product contains substance(s) classified as Immediately Dangerous to Life or Health (IDLH) by the US National Institute for Occupational Safety and Health (NIOSH). The purpose of establishing an IDLH value is to ensure that the worker can escape from a given contaminated environment in the event of failure of the most protective respiratory protection equipment. In the event of failure of respiratory protection equipment every effort should be made to exit immediately.

Chemical Name	IDLH (Immediately Dangerous to Life or Health)
Organophilic clay	Not determined
Crystalline silica (impurity) 14808-60-7	50 mg/m ³ IDLH (respirable dust)

8.2 Exposure controls

A risk assessment is recommended to be performed by a qualified and trained personnel to analyze the worksite and recommends the appropriate controls such as engineering controls, work practice controls, and administrative controls as primary means of reducing employee exposure. When there is a remaining hazards after applying the primary controls, Personal Protective Equipment (PPE) must be used.

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Keep airborne concentrations below exposure limits. Ensure adequate ventilation. Local exhaust ventilation. Apply technical measures to comply with the occupational exposure limits.

Personal protective equipment

Eye protection

Tightly fitting safety goggles.

Hand protection

Gloves- Neoprene, Nitrile Unless Specified Wear gloves according to EN 374 to protect against skin effects from powders Frequent change is advisable

Respiratory Protection

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use an organic vapor cartridge with a P-95 pre-filter attached.If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.

Skin and body protection

Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene Measures

Wash hands before breaks and immediately after handling the product, Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Opaque
Color	Off-white
Odor	Slight odor of fatty acid
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not applicable	
pH @ dilution		No information available
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	PMCC
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		
Upper flammability limit	No information available	
Lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.5 - 1.7	
Bulk density	No information available	
Water solubility	Negligible	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
log Pow	No information available	
Explosive properties	Suspended dust may present a dust explosion hazard	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid contact with heat, sparks, open flame, and static discharge. Avoid dust formation.

10.5 Incompatible materials

Strong acids. Strong oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation

Inhalation of dust in high concentration may cause irritation of respiratory system. Harmful: danger of serious damage to health by prolonged exposure through inhalation. May cause cancer by inhalation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

Eye contact

Dust contact with the eyes can lead to mechanical irritation.

Skin contact

Repeated exposure may cause skin dryness or cracking.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Organophilic clay	No data available	No data available	No data available
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Chemical Name	IARC Group 1 or 2	ACGIH - Carcinogens	OSHA listed carcinogens	NTP
Organophilic clay	No data available	No data available	No data available	No data available
Crystalline silica (impurity)	Group 1; Monograph 100C [2012] Monograph 100C [2012] (listed under Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources); Monograph 68 [1997] Group 1; Monograph 68 [1997]	A2 Suspected Human Carcinogen	Present	Known Human Carcinogen

Sensitization

Not classified.

Mutagenic effects

No evidence of mutagenic properties.

Carcinogenicity

Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity

No evidence of toxicity to reproduction.

Developmental toxicity

Not known to cause birth defects or have a deleterious effect on a developing fetus.

Routes of exposure

Skin contact. Inhalation. Eye contact.

Routes of entry	Inhalation.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Category 2.
Target organ effects	Respiratory system. Lungs.
Aspiration hazard	Not applicable.

12. Ecological Information

12.1 Toxicity

Toxicity to algae

See component information below.

Toxicity to fish

See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Organophilic clay	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l Exposure time: 96h	EC50: > 1000 mg/l Exposure time: 72h	LC50 Daphnia magna (Water flea): > 10000 mg/l Exposure time: 24h

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility

No information available.

12.5 Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects.

None known.

13. Disposal Considerations

13.1 Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state and local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number

UN No. (DOT)	Not regulated
UN No. (MT/ANTT)	Not regulated
UN No. (TDG)	Not regulated
UN/ID No. (ADR/RID/ADN/ADG)	Not regulated
UN No. (IMDG/ANTAQ)	Not regulated
UN No. (ICAO/ANAC)	Not regulated

14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

DOT Hazard class	Not regulated
ANTT Hazard class	Not regulated
TDG Hazard class	Not regulated
ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG/ANTAQ Hazard class	Not regulated
ICAO/ANAC Hazard class/division	Not regulated

14.4 Packing group

DOT/ANTT Packing group	Not regulated
ANTT Packing group	Not regulated
TDG Packing group	Not regulated
ADR/RID/ADN/ADG Packing group	Not regulated
IMDG/ANTAQ Packing group	Not regulated
ICAO/ANAC Packing group	Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

International inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Europe - REACH

Contact REACH@slb.com for REACH information.

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

Chemical Name	SARA 302 / TPQs	SARA 313	CERCLA RQ
Organophilic clay	N/A	N/A	N/A
Crystalline silica (impurity)	N/A	N/A	N/A

California Proposition 65

WARNING



This product can expose you to chemicals including those listed below, which is [are] known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Chemical Name	California Proposition 65
Crystalline silica (impurity) 14808-60-7	Carcinogen

Canadian Classification

This Safety Data Sheet has been prepared in compliance with the Hazardous Products Regulations.

Brazilian Regulations

Brazil Regulation

This SDS was prepared in accordance with Brazil law NBR 14725.

Federal Police

Not determined

Army

Not determined

ANVISA

Not determined

16. Other Information

Supersedes date 29/Mar/2017

Revision date 09/Apr/2018

Version 13

This SDS has been revised in the following section(s)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING 3. Composition/information on Ingredients 5. Fire-fighting measures 8. EXPOSURE CONTROLS / PERSONAL PROTECTION 15. Regulatory Information

HMIS classification

Health 1*

Flammability	1
Physical hazard	0
PPE	E

N/A - Not Applicable, N/D - Not Determined.

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