SAFETY DATA SHEET

Product identifier	**DensDefy® Liquid Flashing**
Other means of identification	None.
Recommended use	Liquid Flashing/Sealant for Dens® Gypsum products, specifically liquid flashing component of DensElement® Barrier System.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Company name	Georgia-Pacific Canada LP
Address	133 Peachtree Street, NE Atlanta, GA 30303
Telephone	Technical Information: 800.225.6119 (M)SDS Request: 404.652.5119
E-mail	MSDSREQ@GAPAC.com
Emergency phone number	Chemtrec - Emergency: 800.424.9300

Physical hazards	Not classified.	
Health hazards	Sensitization, skin	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements

Signal word	Warning
Hazard statement	May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention	Avoid breathing mist/vapours. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves.
Response	IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Immediately call a POISON CENTRE/doctor. Specific treatment (see section 4 on the SDS).
Storage	Store away from incompatible materials (see Section 10 of the SDS).
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information	None.
Other hazards	None known.

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Calcium carbonate		471-34-1	30 - 40
LIMESTONE (CALCIUM CARBONATE)		1317-65-3	30 - 40
Stearic acid		57-11-4	5 - 10
Titanium dioxide		13463-67-7	5 - 10
TRIMETHOXYVINYLSILANE		2768-02-7	5 - 10

Chemical name	Common name and synonyms	CAS number	%
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) Sebacate		41556-26-7	< 1
DECANEDIOIC ACID, METHYL 1,2,2,6,6-PENTAMETHYL-4-PIPERIDINYL ESTER		82919-37-7	< 1
Methyl Alcohol		67-56-1	0.25492
BIS (2-ETHYLHEXYL) ADIPATE		103-23-1	0.21
Other components below reportable levels			20 - 30

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Precautions for safe handling Use personal protection recommended in Section 8 of the SDS. Avoid breathing mist/vapours. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Occupational exposure limits

ACGIH

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	3 mg/m3	Respirable particles.
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	TWA	3 mg/m3	Respirable fraction.

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3	Inhalable particles.
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	TWA	10 mg/m3	Inhalable particles.
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	2.5 mg/m3	Respirable finescale particles
		0.2 mg/m3	Respirable nanoscale particles

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended

Components	Type	Value
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	TWA	10 mg/m3
Methyl Alcohol (CAS 67-56-1)	STEL	328 mg/m3
		250 ppm
	TWA	262 mg/m3
		200 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	STEL	20 mg/m3	Total dust.
	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	STEL	20 mg/m3	Total dust.
	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act), as amended

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3	Inhalable particles.
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	TWA	10 mg/m3	Inhalable particles.
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	2.5 mg/m3	Respirable finescale particles
		0.2 mg/m3	Respirable nanoscale particles

Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191)

Components	Type	Value
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended

Components	Type	Value
Methyl Alcohol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3
TRIMETHOXYVINYLSILANE (CAS 2768-02-7)	STEL	60 mg/m3
		10 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended

Components	Type	Value	Form
Calcium carbonate (CAS 471-34-1)	TWA	10 mg/m3	Total dust.
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	TWA	10 mg/m3	Total dust.
Methyl Alcohol (CAS 67-56-1)	STEL	328 mg/m3	
		250 ppm	
	TWA	262 mg/m3	
		200 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended

Components	Type	Value	Form
Stearic acid (CAS 57-11-4)	TWA	10 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	Total dust.

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21), as amended

Components	Type	Value
Calcium carbonate (CAS 471-34-1)	15 minute	20 mg/m3
	8 hour	10 mg/m3
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	15 minute	20 mg/m3
	8 hour	10 mg/m3
Methyl Alcohol (CAS 67-56-1)	15 minute	250 ppm
	8 hour	200 ppm
Titanium dioxide (CAS 13463-67-7)	15 minute	20 mg/m3
	8 hour	10 mg/m3

Biological limit values

ACGIH Biological Exposure Indices (BEI)

Components	Value	Determinant	Specimen	Sampling Time
Methyl Alcohol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines Occupational Exposure Limits are not relevant to the current physical form of the product.

Canada - Alberta OELs: Skin designation

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Methyl Alcohol (CAS 67-56-1) Danger of cutaneous absorption

Canada - Ontario OELs: Skin designation

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Can be absorbed through the skin.

Methyl Alcohol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methyl Alcohol (CAS 67-56-1) Danger of cutaneous absorption

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
Physical state	Liquid.
Form	Paste.
Colour	Yellow.
Odour	Not available.
Melting point/freezing point	956.15 °C (1753.07 °F) estimated
Boiling point or initial boiling point and boiling range	1543 °C (2809.4 °F) estimated
Flammability	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Flash point	>100.0 °C (>212.0 °F) estimated
Auto-ignition temperature	395 °C (743 °F) estimated
Decomposition temperature	Not available.
pH	Not available.
Kinematic viscosity	Not available.
Solubility	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapour pressure	Not available.
Density and/or relative density	Not available.
Vapour density	Not available.
Particle characteristics	Not available.
Other information	
Explosive properties	Not explosive.
Flammability class	Combustible IIIB estimated
Oxidising properties	Not oxidising.
VOC	0.25 % estimated
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Fluorine. Acids. Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Not applicable under normal conditions of use. May result in obstruction or temporary irritation of the digestive tract.

Symptoms related to the physical, chemical and toxicological characteristics May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Not known.

Product	**Species**	**Test Results**
DensDefy® Liquid Flashing		
Acute		
Dermal		
ATEmix		117700 mg/kg bw
Inhalation		
Vapour		
ATEmix		1177 mg/l
Oral		
ATEmix		5332 mg/kg bw

Components	**Species**	**Test Results**
BIS (2-ETHYLHEXYL) ADIPATE (CAS 103-23-1)		
Acute		
Dermal		
LD50	Rabbit	8410 mg/kg
Oral		
LD50	Rat	5600 mg/kg
		5.6 g/kg
Calcium carbonate (CAS 471-34-1)		
Acute		
Oral		
LD50	Rat	> 2000 mg/kg
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)		
Acute		
Oral		
LD50	Rat	6450 mg/kg
Methyl Alcohol (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
LC50	Rat	87.5 mg/l, 6 Hours
Stearic acid (CAS 57-11-4)		
Acute		
Oral		
LD50	Rat	4.6 g/kg
Titanium dioxide (CAS 13463-67-7)		
Acute		
Dermal		
LD50	Hamster	>= 10000 mg/kg
Oral		
LD50	Rat	> 10000 mg/kg

Components	Species	Test Results
TRIMETHOXYVINYLSILANE (CAS 2768-02-7)		
Acute		
Inhalation		
LC50	Rat	16.8 mg/l, 4 h

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitisation

Canada - Alberta OELs: Irritant

Calcium carbonate (CAS 471-34-1)	Irritant
LIMESTONE (CALCIUM CARBONATE) (CAS 1317-65-3)	Irritant
Titanium dioxide (CAS 13463-67-7)	Irritant

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Risk of cancer cannot be excluded with prolonged exposure. Prolonged exposure to respirable titanium dioxide may cause cancer. However due to the physical form of this product (cured and uncured), exposures are not expected under normal condition of use.

ACGIH Carcinogens

Titanium dioxide (CAS 13463-67-7)	A3 Confirmed animal carcinogen with unknown relevance to humans.

Canada - Manitoba OELs: carcinogenicity

Titanium dioxide (CAS 13463-67-7)	Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

BIS (2-ETHYLHEXYL) ADIPATE (CAS 103-23-1)	3 Not classifiable as to carcinogenicity to humans.
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged exposure may cause chronic effects.

Ecotoxicity Harmful to aquatic life with long lasting effects.

Product		Species	Test Results
DensDefy® Liquid Flashing			
Aquatic			
Crustacea	EC50	Daphnia	238095.2813 mg/l, 48 Hours estimated
Fish	LC50	Fish	333.3333 % v/v, 96 hours
Acute			
Crustacea	EC50	Daphnia	19898.5566 mg/l, 48 hours estimated
Fish	LC50	Fish	224.423 mg/l, 96 hours estimated

Components		Species	Test Results
BIS (2-ETHYLHEXYL) ADIPATE (CAS 103-23-1)			
Aquatic			
Algae	IC50	Algae	500.0001 mg/l, 72 Hours
Crustacea	EC50	Daphnia	500.0001 mg/l, 48 Hours

Components		Species	Test Results
Acute			
Fish	LC50	Bluegill (Lepomis macrochirus)	0.48 - 0.85 mg/l, 96 hours
Methyl Alcohol (CAS 67-56-1)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Mummichog (Fundulus heteroclitus)	> 1000 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Methyl Alcohol	-0.77
Stearic acid	8.23

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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Version No. 01

Disclaimer This SDS is intended to quickly provide useful information to the user(s) of this material or product. It is not intended to serve as a comprehensive discussion of all possible risks or hazards, and it assumes a reasonable use of the product. The information contained in this SDS is believed to be accurate as of the date of preparation of this SDS and has been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. The user or handler (or their employer) should consider the specific conditions in which this material will be used, handled, or stored and determine what specific safety or other precautions are required. Employers should ensure that their employees, agents, contractors, and customers who will use the product receive adequate warnings and safe handling procedures, including a current SDS. Product users or handlers (or their employer) who are unsure of what specific precautions are required should consult their employer, product supplier, or safety or health professionals before handling or working with this product. Please notify us immediately if you believe this SDS or other safety and health information about this product is inaccurate or incomplete.

Revision information This document has undergone significant changes and should be reviewed in its entirety.