SAFETY DATA SHEET

GHS United States

Section 1. Product and company identification

A Wholly Owned Subsidiary of R.T. Vanderbilt Holding Company, Inc.

Product name	VANFRE® F60	In case of emergency
Code Supplier/Manufacturer	49814	1-203-853-1400 Chemtrec: 1-800-424-9300
Supplier/Manufacturer	Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855	Outside US: +1-703-527-3887
Synonym	Not available.	
Material uses	Processing aid	

Section 2	Hazarde	identification

Solid.

OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	
Classification of the substance or mixture	COMBUSTIBLE DUSTS	
GHS label elements		
Signal word	Warning	
Hazard statements	May form combustible dust concentrations in air.	
Precautionary statements		
Prevention	Not applicable.	
Response	Not applicable.	
Storage	Not applicable.	
Disposal	Not applicable.	
Supplemental label elements	Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.	
Hazards not otherwise classified	None known.	

Section 3. Composition/information on ingredients

Substance/mixture

Product type

Mixture

Ingredient name	CAS number	% by weight
fatty acids, C16-18 and C18-unsatd., zinc salts	67701-13-7	70
calcium carbonate	471-34-1	20
fatty acids, C16-18, esters with pentaerythritol	85116-93-4	10

Occupational exposure limits, if available, are listed in Section 8.

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Section 4. First aid measures

Description of necessary first aid measures		
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.	
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 adverse health effects persist or are severe. 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.	
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.	
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 if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. 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.	

Most important symptoms/effects, acute and delayed

Potential acute health effects	
Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.
Over-exposure signs/symptom	<u>IS</u>
Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	In case of fire, use water spray (fog), foam, dry chemical or CO_2 .
Unsuitable extinguishing media	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
Specific hazards arising from the chemical	May form explosible dust-air mixture if dispersed.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides
Special protective actions for fire-fighters	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 fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	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 flares, smoking or flames in hazard area. 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-emergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling	
Protective measures	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
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	Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. 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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Exposure Limits for Total Product

As particles not otherwise specified (PNOS).

TLV® TWA: 10 mg/m3 inhalable particles (ACGIH) 3 mg/m3 respirable particles (ACGIH)

As particles not otherwise regulated (PNOR).

TWA: 15 mg/m3 total dust (OSHA)

5 mg/m3 respirable dust (OSHA)

Appropriate engineering controls	The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

ndividual 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.

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Section 8. Exposure controls/personal protection

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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side- shields. Recommended: safety glasses with side-shields
Skin protection	
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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
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. Recommended: lab coat
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	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Personal protective equipment (Pictograms)	



Section 9. Physical and chemical properties

<u>Appearance</u>	
Physical state	Solid. [Flakes.]
Color	Beige.
Odor	Characteristic.
Odor threshold	Not available.
рН	Not available.
Melting point	90°C (194°F)
Boiling point	Not available.
Flash point	Open cup: >270°C (>518°F) [COC]
Burning time	Not available.
Burning rate	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive	Not available.
(flammable) limits	
Vapor pressure	Not available.
Vapor density	Not available.
Density	1.16 g/cm³ [20°C (68°F)]
Relative density	Not available.
Solubility	Insoluble in the following materials: cold water.
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Section 9. Physical and chemical properties

Not available.
Not available.

Section	10.	Stability	and	reactivity
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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	Under normal conditions of storage and use, hazardous reactions will not occur.		
Conditions to avoid	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.		
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials		
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.		

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
fatty acids, C16-18 and C18-unsatd., zinc salts	LC50 Inhalation Vapor	Rat	>5.7 mg/l Based on tests of similar materials	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg Based on tests of similar materials	-
	LD50 Oral	Rat	>5000 mg/kg Based on tests of similar materials	-
calcium carbonate	LC50 Inhalation Dusts and mists LD50 Dermal LD50 Oral	Rat Rat Rat	>3 mg/l >2000 mg/kg >2000 mg/kg	4 hours - -
fatty acids, C16-18, esters with pentaerythritol	LC50 Inhalation Dusts and mists	Rat	>5 mg/l Based on tests of	4 hours
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Section 11. Toxicological information

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LD50 Dermal	Rat	similar materials >2000 mg/kg	_
		Based on tests	
		of similar materials	
LD50 Oral	Rat	>2000 mg/kg Based on tests	-
		of similar materials	

Irritation/Corrosion

Not available.

Conclusion/Summary	
Skin	fatty acids, C16-18, esters with pentaerythritol: Non-irritating to the skin. (Rabbit) fatty acids, C16-18 and C18-unsatd., zinc salts: Non-irritating to the skin. (Rabbit) (Based on tests of similar materials) calcium carbonate: Non-irritating to the skin. (Rabbit)
Eyes	fatty acids, C16-18, esters with pentaerythritol: Non-irritating to the eyes. (Rabbit) fatty acids, C16-18 and C18-unsatd., zinc salts: Non-irritating to the eyes. (Rabbit) (Based on tests of similar materials) calcium carbonate: Non-irritating to the eyes. (Rabbit)

Sensitization

Product/ingredient name	Route of exposure	Species	Result
calcium carbonate fatty acids, C16-18 and C18-unsatd., zinc salts	skin skin	Mouse Guinea pig	Not sensitizing Not sensitizing (Based on tests of similar materials)
fatty acids, C16-18, esters with pentaerythritol	skin	Mouse	Not sensitizing (Based on tests of similar materials)

Mutagenicity

Product/ingredient name	Test	Experiment	Result
calcium carbonate	OECD 471	Experiment: In vitro Subject: Bacteria	Negative
fatty acids, C16-18 and	-	Experiment: In vitro	Negative (Based on
C18-unsatd., zinc salts		Subject: Bacteria	tests of similar materials)
fatty acids, C16-18, esters with pentaerythritol	OECD 473	Experiment: In vitro Subject: Mammalian-Human	Negative (Based on tests of similar materials)
	OECD 474	Experiment: In vivo Subject: Mammalian-Animal	Negative (Based on tests of similar materials)

Conclusion/Summary

fatty acids, C16-18 and C18-unsatd., zinc salts: Weakly positive results shown in in vivo mammalian germ cell study using rats. (Based on tests of similar materials)

Carcinogenicity

Not available.

Reproductive toxicity

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Section 11. Toxicological information

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure) Not available.

Aspiration hazard

Not available.

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Information on the likely	Not available.
routes of exposure	

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	May be harmful in contact with skin.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

<u>Short term exposure</u>	
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 effect	<u>s</u>

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure	
calcium carbonate	Sub-chronic NOAEL Oral	Rat	1000 mg/kg	-	
fatty acids, C16-18 and	Sub-chronic NOEL Oral	Mouse	3000 ppm	-	
C18-unsatd., zinc salts			Based on tests of similar		
			materials		
fatty acids, C16-18, esters	Sub-chronic NOAEL Oral	Rat	1450 mg/kg	-	
with pentaerythritol			Based on tests		
			of similar		
			materials		
General	No known significant effects or critical hazards.				
Carcinogenicity	No known significant effects or critical hazards.				

Carcinogenicity	No known significant effects or critical hazards.
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	8333.3 mg/kg
Dermal	2500 mg/kg

Other information

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
calcium carbonate	Acute EC50 >14 mg/l Based on tests of similar materials	Algae	72 hours
	Acute EC50 >100 mg/l Based on tests of similar materials	Daphnia	48 hours
	Acute LC50 >100 mg/l Based on tests of similar materials	Fish	96 hours
fatty acids, C16-18 and C18-unsatd., zinc salts	Acute LC50 >100 mg/l No effect up to the limit of solubility. (Based on tests of similar materials)	Algae	72 hours
	Acute LC50 >100 mg/l No effect up to the limit of solubility. (Based on tests of similar materials)	Daphnia	48 hours
	Acute LC50 >1 mg/l No effect up to the limit of solubility. (Based on tests of similar materials)	Fish	96 hours
fatty acids, C16-18, esters with pentaerythritol	Acute EC50 >100 mg/l	Algae	72 hours
	Acute EC50 >100 mg/l Based on tests of similar materials	Daphnia	48 hours
	Acute LC50 >100 mg/l Based on tests of similar materials	Fish	96 hours

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Section 12. Ecological information

Persistence and degradability

Product/ingredient name	Test	Result		Dose		Inoculum
fatty acids, C16-18 and C18-unsatd., zinc salts	OECD 301D	93 % - Readily - 28 days		-		-
fatty acids, C16-18, esters with pentaerythritol	OECD 301B	>60 % - Readily - 28 days (Based on tests of similar materials)		-		-
Product/ingredient name	Aquatic half-life		Photolysis		Biodegradability	
fatty acids, C16-18, esters with pentaerythritol	-		-		Readily	/

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
fatty acids, C16-18, esters with pentaerythritol	30.81	-	high

Mobility in soil

Soil/water partition coefficient (Koc)

Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Section 14 Transport information

Section 14. Transport information						
Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG* : Packing group

Section 15. Regulatory information

United States inventory (TSCA 8b) All components are listed or exempted.

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 307: fatty acids, C16-18 and C18-unsatd., zinc salts

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ Not applicable.

SARA 311/312 **Classification**

COMBUSTIBLE DUSTS

Composition/information on ingredients

No products were found.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	fatty acids, C16-18 and C18-unsatd., zinc salts	67701-13-7	70
Supplier notification	fatty acids, C16-18 and C18-unsatd., zinc salts	67701-13-7	70

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts	None of the components are listed.	
New York	None of the components are listed.	
New Jersey	The following components are listed: ZINC compounds	
Pennsylvania	The following components are listed: ZINC COMPOUNDS	
California Prop. 65	None of the components are listed.	

International regulations

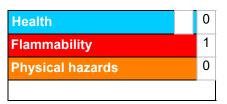
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Section 15. Regulatory information

All components are listed or exempted.
At least one component is not listed in DSL but all such components are listed in NDSL.
All components are listed or exempted.
All components are listed or exempted.
At least one component is not listed.
All components are listed or exempted.

Section 16. Other information

Hazardous Material Identification System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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Section 16. Other information

Key to abbreviations	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient			
	MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations			
References	Not available.			
Information contact	Vanderbilt Global Services, LLC Corporate Risk Management			
	1-203-295-2143			

Visit www.vanderbiltchemicals.com for more information.

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