Safety Data Sheet (SDS)

Prepared to comply with GHS (Globally Harmonized System), WHMIS and OSHA-Hazard Communication Standard 29 CFR.1910.1200, System of Classifying and Labeling of Chemicals

Material Name: Spent Sulfuric Acid Plant 6 FID: 600149

Section 1: Identification

1.1 Product trade name: **Spent Sulfuric Acid Plant 6**

1.2 Product Class: Spent Sulfuric Acid, Sulfuric Acid

Product Code: 600149

CAS/EC Number: Mixture (composition detailed in Section 3)

Intended Use: Phosphate removal in municipal and sewage treatment plants

1.3 Supplier:

Nexteer Automotive Corporation
3900 Holland Road, Saginaw, MI 48601

Technical Contact: 1-989-757-4255

1.4 Emergency telephone:

Infotrac: 1-800-535-5053

Section 2: Hazard(s) Identification

2.1 Classification: Corrosive liquid.

Skin Corrosion/Irritation: Category 1 (based on pH <2)

Serious Eye Damage/Eye Irritation: Category 1 (based on pH <2)

Acute Toxicity: Category 4 (inhalation of vapor/oral based on standard H2SO4 data)

2.2 Labeling:

Pictograms:

Signal word: DANGER

Hazard statements

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H290: May be corrosive to metals.

Precautionary Statements:

P234: Keep in original packaging.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

Section 2: Hazard(s) Identification

Precautionary Statements (continued):

P302+P312: IF ON SKIN: Wash with plenty of water. Flush immediately with large amounts of water for at least 15 minutes or until burning sensation has dissipated. Seek medical attention or advice for burns.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If mist or vapor of this product is inhaled, and person is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362+P364: Take off contaminated clothing and wash it before reuse.

P403: Store in a well-ventilated place.

P405: Store locked up.

P501: Dispose of contents/container in accordance with local/regional/national/international regulation.

2.3 Other Hazards: Corrosive liquid and mist cause severe burns to all body tissue. May be fatal if swallowed. May be harmful if inhaled or if in contact with skin. Water reactive. According to IARC, chronic exposure to strong inorganic acid mists containing sulfuric acid may cause cancer. Product is blue green corrosive liquid with a medium/strong odor. Mixture may be corrosive to metals. Avoid release to the aquatic environment.

Section 3: Composition/Information on Ingredients

Chemical Name	EINECS/EC	CAS	Percent	Classification
Sulfuric Acid	231-639-5	7664-93-9	5-10%	Skin Corr- Cat 1 Eye Dam- Cat 1
Water	231-791-2	7732-18-5	80-90%	N/A
Iron	231-096-4	7439-89-6	5-10%	N/A

Section 4: First-Aid Measures

4.1 Description of first aid measures:

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

Skin Contact: For skin contact flush immediately with large amounts of water for at least 15 minutes or until burning sensation has dissipated. Immediately take off all contaminated clothing. Seek medical attention or advice for burns. Wash contaminated clothing before reuse.

Eye Contact: Flush eyes immediately with gentle but large amounts of water for at least 15 minutes, lifting lower and upper lid occasionally. Continue to flush eyes while awaiting medical attention.

Ingestion: DO NOT INDUCE VOMITING. Give large quantities of water. Seek medical attention immediately.

Note to Physician: Avoid gastric lavage or emesis.

Section 4: First-Aid Measures

4.2 Most important symptoms and effects:

Inhalation: Product damages the mucous membranes and upper respiratory tract. Symptoms include irritation to the nose and throat, cough, labored breathing, and shortness of breath. Symptoms may be delayed. May cause lung edema, a medical emergency. Long-term exposure to mist or vapors may cause damage to teeth. According to IARC, chronic exposure to strong inorganic acid mists containing sulfuric acid is a cancer hazard.

Skin Contact: Symptoms of redness, pain, blisters, and severe burn can occur if the solution is left in contact with skin longer than a few minutes.

Eye Contact: Contact can cause blurred vision, redness, pain and severe burns.

Ingestion: Swallowing can cause severe burns of the mouth, throat and stomach, leading to death. Can cause sore throat, vomiting and diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and limited urination may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

4.3 Indication of any immediate medical attention and special treatment needed: See Section 4.1.

Section 5: Fire-Fighting Measures

5.1 Extinguishing media: Dry chemical, foam or carbon dioxide. Do not use water on material. However, water spray may be used to keep fire exposed containers cool.

5.2 Special hazards arising from the substance or mixture: Concentrated material is a strong dehydrating agent. Reacts with organic material and may cause ignition of finely divided materials (organic powder) on contact. Contact with most metals causes formation of flammable and explosive hydrogen gas.

5.3 Advice to firefighters: Firefighters should wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

Section 6: Accidental Release Measures

6.1 Personal precautions: Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary and unprotected personnel from entering. Reduce vapors with water mist.

6.2 Environmental precautions: Place in properly labeled closed container for disposal.

6.3 Methods and materials for containment and cleaning up: Ventilate area of spill or leak. Isolate hazard area. Contain and recover liquid when possible. Absorb with sand or vermiculite, or other non-combustible/nonreactive material. Add an alkaline material (lime, crushed limestone, sodium bicarbonate, or soda ash). Be sure the container holding the material can withstand heat and is compatible with acid. Reduce vapors with water mist.

6.4 Reference to other sections: N/A

Section 7: Handling and Storage

7.1 Precautions for safe handling: Handle as a corrosive liquid. Do not get this material in your eyes, on your skin, or on your clothing. Do not inhale vapors or mists of this product.

7.2 Conditions for safe storage, including any incompatibilities: Store in a dry, cool, well-ventilated place, away from incompatible materials. Keep the container tightly closed and dry. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end uses: *See Section 1 for intended uses.*

Section 8: Exposure Controls/Personal Protection

8.1 Control parameters: Note the limits shown below are for guidance only. Follow applicable regulations in your jurisdiction.

Substance Name	Source	TWA	STEL
Sulfuric Acid	ACGIH	0.2 mg/m3 8-hour-TWA TLV (thoracic fraction)	1 mg/m3 STEL, or 0.3 mg/m3 for no more than a total of 30 minutes during a work day
	OSHA	1 mg/m3 TWA	
	NIOSH	1 mg/m3 10-hour TWA	

8.1.1 Currently recommended monitoring procedures: No recommendations.

8.1.2 Exposure guidelines for air contaminants, if any: See Section 8.1

8.1.3 DNELS and PNECS for exposure scenarios: Information not available at this time.

8.1.4 Control banding for risk management: Use good industrial hygiene practice, where appropriate PPE and use local ventilation.

8.2 Exposure Controls:

8.2.1 Appropriate engineering controls: Use local exhaust ventilation. Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

8.2.2 Individual protection methods: Use good industrial hygiene practices in handling this material. Eyewash fountains and emergency showers are necessary.

Eye/Face: Use appropriate eye protection; full face-shield.

Skin: Wear gloves, face shield and appropriate protective clothing.

Respiration: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Section 9: Physical and Chemical Properties

Physical State:	Liquid
Color:	Blue green liquid
Specific gravity:	1.84 (98%), 1.4 (50%) (water = 1.0)
Odor:	Medium/Strong
Odor threshold:	Not Evaluated

Section 9: Physical and Chemical Properties

PH-value:	<2
Melting point:	3°C (100%), -32°C (93%)
Freezing point:	Not Evaluated
Initial Boiling Point:	~290°C (554°F) decomp 340°C
Flash point:	>200°F (>93.3°C)
Evaporation rate:	Not Evaluated
Flammability (solid, gas):	Non-flammable
Explosion Limits:	Not Evaluated
Vapor pressure:	1 @ 145.8°C (295°F)
Vapor density:	3.4
Relative Density:	Not Evaluated
Solubility:	Miscible – liberates heat
Partition coefficient:	Not Evaluated
Auto-ignition temperature:	Not Evaluated
Decomposition temperature:	Not Evaluated
Viscosity:	Not Evaluated

Section 10: Stability and Reactivity

10.1 Reactivity: Concentrated solutions react violently with water, spattering and liberating heat.

10.2 Chemical stability: Stable under ordinary conditions of use and storage.

10.3 Possibility of hazardous reactions: No data for the product is available.

10.4 Conditions to avoid: Heat, moisture, incompatibles.

10.5 Incompatible materials: Water, potassium chlorate, potassium perchlorate, potassium permanganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals (yields hydrogen gas), strong oxidizing and reducing agents and many other reactive substances.

10.6 Hazardous decomposition products: Upon decomposition, this product emits sulfur gases and hydrogen gas.

Section 11: Toxicological Information

11.1 Information on toxicological effects:

Acute Exposure and Symptoms:

Inhalation: Product damages the mucous membranes and upper respiratory tract. Symptoms include irritation to the nose and throat, cough, labored breathing, and shortness of breath. Symptoms may be delayed. May cause lung edema, a medical emergency.

Skin Contact: Symptoms of redness, pain, blisters, and severe burn can occur if the solution is left in contact with skin longer than a few minutes.

Section 11: Toxicological Information

Eye Contact: Corrosive to the eyes. Contact can cause blurred vision, redness, pain and severe burns.

Ingestion: Swallowing can cause severe burns of the mouth, throat and stomach, leading to death. Can cause sore throat, vomiting and diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and limited urination may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

Chronic Exposure:

Chronic exposure may cause permanent injuries to the skin, respiratory tract, and eyes.

Acute and Chronic Toxicity

Component Analysis: LD50/LC50

Sulfuric acid (7664-93-9): Inhalation LC50 Rat: 370-420 mg/m3/2H; Inhalation LC50 Mouse: 600-850 mg/m3/2H; Inhalation LC50 Guinea pigs (8 hour): 18-50 mg/m3/2H; Inhalation LC50 Rabbit: 1,470-1,610 mg/m3/2H; Oral LD50 Rat: 2,140 mg/kg

Iron (7439-89-6): Oral LD50 Rat: 30 mg/kg

Component Carcinogenicity

Sulfuric acid (7664-93-9):

***ACGIH:** A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)

***IARC:** Monograph 54, 1992; (see RR-04058-4) (Group 1 - Carcinogenic to humans, contained in strong inorganic acid mists)

***California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause Cancer: Sulfuric Acid**

*This classification applies only to inorganic-acid mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

Section 12: Ecological Information (non-mandatory)

12.1 Ecotoxicity:

General Product Information: Keep material from entering sewer or waterways.

Component Analysis - Ecotoxicity - Aquatic Toxicity:

LC50 Brachydanio rerio (freshwater fish, static 82 mg/L/24 hr; LC50 Carassius auratus (freshwater fish) static, hard water pH 4.5, 134 mg/L/96hr; LC50 Flounder 100 to 330 mg/L48hr aerated water/Conditions of bioassay not specified; LC50 Shrimp 80 to 90 mg/L/48hr aerated water/Conditions of bioassay not specified; LC50 Prawn 42.5 ppm/48hr salt water/Conditions of bioassay not specified (based on data for unused sulfuric acid, 52 to 100%). The no observed effects concentrations (NOECs) selected were obtained on a natural (cold water) lake artificially contaminated by the controlled addition of sulfuric acid: NOEC in phytoplankton community structure = pH 5.6 = 0.13 mg/L sulfuric acid; NOEC in zooplankton population repartition = pH 5.6 = 0.13 mg/L sulfuric acid; NOEC in fish population recruitment = pH 5.93 = 0.058 mg/L sulfuric acid. There is only one validated NOEC available for warm water fish (Jordanella floridae), 0.025 mg/L, which is derived from the LOEC/2.

Environmental Fate

When released into the soil, this material may leach into groundwater and move in the direction of groundwater flow and downward since its mass density exceeds that of water. During transport

Section 12: Ecological Information (non-mandatory)

through soil, sulfuric acid can dissolve some of the soil components, such as carbonate-based materials and metals. Sulfuric acid will ultimately react with calcium and magnesium in water to form sulfate salts. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may also be removed from the atmosphere to a moderate extent by dry deposition.

Section 13: Disposal Considerations (non-mandatory)

13.1 Waste treatment methods:

General Product Information: Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Component Waste Numbers: No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions: Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

Section 14: Tranport Information (non-mandatory)

US DOT Information	IMDG	IATA
Shipping Name: RQ, Sulfuric acid, spent	**Shipping Name:** Sulphuric acid (spent)	**Shipping Name:** Sulphuric acid (spent)
UN/NA #: UN1832	**UN/NA #:** UN1832	**UN/NA #:** UN1832
Hazard Class: 8	**Hazard Class:** 8	**Hazard Class:** 8
Packing Group: II	**Packing Group:** II	**Packing Group:** II

Section 15: Regulatory Information (non-mandatory)

15.1 Safety, health, and environmental regulation:

US Federal Regulations

General Product Information: All components are on the U.S. EPA TSCA Inventory List.
Component Analysis: This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Sulfuric acid (7664-93-9):
SARA 302: 1,000 lb TPQ
SARA 311/312 Tier II Hazard Ratings:

Sulfuric Acid (CAS 7664-93-9)				
Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Reactivity Hazard	Sudden Release of Pressure
Yes; Corrosive	Yes	No*	Yes; Bases, Water, Corrosive to metals.	No

*Sulfuric acid is not flammable or combustible; however, fires may result from heat generated by contact of concentrated sulfuric with combustible materials.

Section 15: Regulatory Information (non-mandatory)

SARA 313: 1.0 percent de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
CERCLA: 1000 lb final RQ; 454 kg final RQ

State Regulations

General Product Information: Other state regulations may apply. Check individual state requirements.

Component Analysis - State: The following components appear on one or more of the following state hazardous substances lists

California Prop. 65 Components: WARNING! This product contains a chemical known to the State of California to cause Cancer: Sulfuric Acid

Component	EINECS/EC	CAS	CA	MA	MN	NJ	PA	RI
Sulfuric Acid	231-639-5	7664-93-9	Yes	Yes	Yes	Yes	Yes	Yes
Iron	231-096-4	7439-89-6	Yes	No	No	No	No	No

Component Analysis - WHMIS IDL: The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	EINECS/EC	CAS	Minimum Concentration
Sulfuric Acid	231-639-5	7664-93-9	1%; English Item 1485; French Item 138

Additional Regulatory Information
General Product Information: No additional information available.
Component Analysis – Inventory:

Component	EINECS/EC	CAS	TSCA	CAN	EEC
Sulfuric Acid	231-639-5	7664-93-9	Yes	DSL	EINECS
Iron	231-096-4	7439-89-6	Yes	DSL	EINECS

Section 16: Other Information

Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Safety Data Sheet before handling product.

Section 16: Other Information

Key to Abbreviations and Acronyms:

ACGIH:	American Conference of Governmental Industrial Hygienists
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP:	Classification, Labelling, and Packaging
DNEL:	Derived no effect level
DSL:	Canada's Domestic Substances List
EC:	European Community
EEC:	European Economic Community
EINECS:	European Inventory of Existing Commercial Chemical Substances
EPA:	Environmental Protection Agency
EU:	European Union
GHS	Globally Harmonized System of classification and labelling of chemicals
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
ATA-DGR:	Dangerous Goods Regulations by the International Air Transport Association
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the International Civil Aviation Organization (ICAO)
IMDG:	International Maritime Code for Dangerous Goods
LC50:	Lethal concentration in air fatal to 50 percent of test animals
LD50:	Lethal dose by mouth or other route to 50 percent of test animals
LDLo:	Lowest lethal dose
NIOSH:	National Institute for Occupational Safety and Health
NJTSR:	New Jersey Trade Secret Registry
NOEC:	No observed effects
NOS:	Not Otherwise Specified
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration (USA)
PNEC:	Predicted no effect concentration
PPM:	Parts per million
STEL:	Short term exposure limit
TLV:	Threshold Limit Value
TSCA:	Toxic Substance Control Act
TWA:	Time weighted average
RID:	Regulations Concerning the International Transport of Goods by Rail

****This is the end of SDS 600149****