



PROTECTION · CHOICES · PEOPLE
MAKE GREEN WORK

Safety-Kleen Systems, Inc.
16540 SE 130th Ave Bldg. B
Clackamas, OR 97015
800-669-5740
www.safety-kleen.com

April 23, 2018

VIA FedEx: 7806 5005 6629

Northwest Region
DEQ Solid Waste Programs
700 NE Multnomah Street, Suite 600
Portland, OR 97232

RE: Application for a Solid Waste Beneficial Use Determination
Safety-Kleen Systems, Incorporated
16540 SE 130th Street
Clackamas, OR 97015

Dear Coordinator:

After submitting the Safety-Kleen Systems, Inc. Clackamas facility Application for a Solid Waste Beneficial Use Determination, it was brought to our attention that the information required under Section F. Performance Criteria, was not included. Attached please find the full application, which now includes information as required under the Performance Criteria section of the application.

Please feel free to contact me should you have any questions or need additional information.

Sincerely,

Sheila Smith, Director, Environmental Compliance
Emerald Services, Inc., A Safety-Kleen Company
(206) 832-3204 (o); (253) 370-7912 (c)
ssmith@emeraldrenews.com

Attachment: Application for a Solid Waste Beneficial Use Determination

cc: Intel Corporation, 2501 NW Century Blvd, Hillsboro, Oregon 97124
ecc: Heather Kuoppamaki – Sr. Environmental Engineer, ODEQ
Gary Wheeler – General Manager, Safety-Kleen Clackamas
Matthew Sauvageau – VP Environmental Compliance, Clean Harbors Inc.
Safety-Kleen Clackamas Compliance File



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Safety-Kleen Systems, Inc.
16540 SE 130th Ave Bldg. B
Clackamas, OR 97015
800-669-5740
www.safety-kleen.com

April 10, 2018

VIA FedEx: 7719 5418 1415

Northwest Region
DEQ Solid Waste Programs
700 NE Multnomah Street, Suite 600
Portland, OR 97232

RE: Application for a Solid Waste Beneficial Use Determination
Safety-Kleen Systems, Incorporated
16540 SE 130th Street
Clackamas, OR 97015

Dear Coordinator:

Please find the attached Application for a Solid Waste Beneficial Use Determination for product ammonium sulfate managed through the subject Safety-Kleen Clackamas facility on behalf of Intel Corporation located at 2501 NW Century Blvd, Hillsboro, Oregon 97124.

Please feel free to contact me should you have any questions or need additional information.

Sincerely,

Sheila Smith, Director, Environmental Compliance
Emerald Services, Inc., A Safety-Kleen Company
(206) 832-3204 (o); (253) 370-7912 (c)
ssmith@emeraldrenews.com

Attachment: Application for a Solid Waste Beneficial Use Determination

cc: Intel Corporation, 2501 NW Century Blvd, Hillsboro, Oregon 97124
Gary Wheeler – General Manager, Safety-Kleen Clackamas
Matthew Sauvageau – VP Environmental Compliance, Clean Harbors Inc.
Safety-Kleen Clackamas Compliance File



Application for a Solid Waste Beneficial Use Determination

DEQ USE ONLY – BUSINESS OFFICE

Date Received: _____

Amount Received: _____

Check No.: _____

Deposit No.: _____


Forward confirmation of fee payment for:
Eastern Region to DEQ, The Dalles
Northwestern Region to DEQ-NWR, Portland
Western Region to DEQ, Salem**A. REFERENCE INFORMATION** (Please type or print clearly.)

Safety-Keen Systems, Inc.		Clackamas Facility	
Legal name of applicant		Business name of applicant if different	
16540 SE 130th Street		Clackamas	OR 97105
Mailing address		City	State Zip
503-657-7033	503-793-8083	gary.wheeler@safety-kleen.com	503-657-7184
Phone	Mobile	E-mail	Fax

Intel Corporation			
Generator of solid waste (may be same as applicant)			
2501 NW Century Blvd		Hillsboro	OR 97124
Mailing address		City	State Zip
503-696-8080	N/A	N/A	N/A
Phone	Mobile	E-mail	Fax

B. TYPE OF BENEFICIAL USE DETERMINATION REQUESTED Beneficial Use Determination applications are categorized based on the type of information and potential amount of work required by DEQ staff to review application materials and render a decision. A tiered review and fee system has been established in rule. The tiers are:

- Tier 1 For a beneficial use of a solid waste that does not contain hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product and that will be used in a manufactured product;
- Tier 2 For a beneficial use of a solid waste that contains hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product, or involves application on the land;
- Tier 3 For a beneficial use of a solid waste that requires research, such as a literature review or risk assessment, or for a demonstration project to demonstrate compliance with this rule.

I am applying for a ☒ Tier 1 ☐ Tier 2 ☐ Tier 3 determination.**C. DOES THIS PROPOSED BENEFICIAL USE INVOLVE LAND APPLICATION OF ANY MATERIAL?**☐ Yes ☒ No**D. SIGNATURE** I hereby certify by my signature below that the information contained in this application, and the documents I have attached, are true and correct to the best of my knowledge and belief.
Signature of legally authorized representativeSheila Smith
Print nameDirector, Environmental Compliance
Title4/9/18
Date

E. REQUIRED ATTACHMENTS TO THIS APPLICATION *(For an application to be complete, it must provide the required information for each listed item of the tier which is being applied for.)*

Tier 1

- ☒ A description of the material, manner of generation, and estimated quantity to be used each year;
- ☒ A description of the proposed use;
- ☒ A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;
- ☒ A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and
- ☒ Any other information that DEQ may require to evaluate the proposal.

Tier 2

- ☐ The information required for a Tier 1 application;
- ☐ Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable;
- ☐ A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels;
- ☐ Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk;
- ☐ Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude); and
- ☐ A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.

Tier 3

- ☐ The information required for a Tier 1 & 2 application;
- ☐ A discussion of the justification for the proposal;
- ☐ An estimate of the expected length of time that would be required to complete the project, if it is a demonstration; and
- ☐ If it is a demonstration project, the methods proposed to ensure safe and proper management of the material.

F. PERFORMANCE CRITERIA *(For all tiers - An application for a beneficial use determination must demonstrate satisfactory compliance with the following performance criteria.)*

The use is productive, including:

- ♦ There is an identified or reasonably likely use for the material that is not speculative;
- ♦ The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by DEQ, and does not constitute disposal; and
- ♦ The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.

The use will not create an adverse impact to public health, safety, welfare, or the environment, including:

- ♦ The material is not a hazardous waste under ORS 466.005;
- ♦ Until the time the material is used in accordance with a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;
- ♦ Hazardous substances in the material do not significantly exceed the concentration in a comparable raw material or commercial product, or do not exceed naturally occurring background concentrations, or do not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

The use will not result in the increase of a hazardous substance in a sensitive environment.

The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions.

The use will comply with all applicable federal, state, and local regulations.

G. FEES *(Must accompany the application for it to be considered complete)*

<input checked="" type="checkbox"/>	Tier 1 beneficial use determination	\$1,000
<input type="checkbox"/>	Tier 2 beneficial use determination	\$2,000
<input type="checkbox"/>	Tier 3 beneficial use determination	\$5,000

Make checks out to: **Oregon DEQ**Total fees included: \$1,000**H. APPLICATION PROCEDURE**Step 1

Contact a DEQ staff person for assistance with the preparation of the application. DEQ staff will help with: 1) Determination of the eligibility for a beneficial use determination of a particular waste or process; and, 2) If eligible, establish the tier of beneficial use determination review required and associated fee to submit with the application.

Step 2

Mail the original signed application, all attachments, including the fee payment plus one extra copy to the appropriate regional office (see listing below.) Note that DEQ review work will not begin until a complete application packet is received. Incomplete applications may be returned. DEQ recommends the applicant keep a full copy of all application materials to guard against possible loss in transit.

Step 3

DEQ will contact the applicant, acknowledging receipt of the application, and will identify the staff person assigned to carryout the review. This staff person will contact the applicant if any additional information is needed.

Region	Counties Served	Address & Phone
Eastern Region	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler	Eastern Region Department of Environmental Quality 400 E Scenic Drive, Ste 2.307 The Dalles, OR 97058 (541) 298-7255 ext. 221
Northwest Region	Clatsop, Clackamas, Columbia, Multnomah, Tillamook, and Washington	Northwest Region DEQ Solid Waste Programs 700 NE Multnomah Street, Suite 600 Portland, OR 97232 (503) 229-5353
Western Region	Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill	Western Region DEQ Solid Waste Programs 750 Front St. NE Suite 120 Salem, OR 97301 (503) 378-5047

APPLICATION FOR A SOLID WASTE BENEFICIAL USE DETERMINATION

Safety-Kleen Systems, Incorporated
16540 SE 130th Street
Clackamas, OR 97015

REQUIRED ATTACHMENTS TO THIS APPLICATION

Tier 1

1. A description of the material, manner of generation, and estimated quantity to be used each year;

The material for determination is a non-hazardous solid waste ammonium sulfate bulk liquid solution. See attached Clean Harbors Profile No. ASXB-RAPB1A for Intel Corporation. The material is generated as a by-product in chip manufacturing. It is estimated that 408 tons of bulk solution per month will be generated and shipped to the Safety-Kleen Clackamas facility.

2. A description of the proposed use;

The Safety-Kleen Clackamas facility will consolidate the bulk loads for shipment to Wilson Industrial Sales Co., Inc. as a wholesale marketer and distributor of chemical products. The ammonium sulfate material is then sent to Helena Chemical Company as a beneficial reuse product replacing virgin chemicals in the manufacture of fertilizer products.

3. A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;

The Intel reuse material includes an analytical results summary that shows the percentage and characteristics of the by-product which is consistent with virgin ammonium sulfate solution and its chemical composition. See attached Intel solution Analytical Result Summary prepared by Orange Coast Analytical, Inc. and the GAC Chemical Corporation SDS for Ammonium Sulfate Solution.

4. A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and

The applicant and generator of the solid waste have demonstrated compliance with OAR 340-093-0280 in that the waste material characteristics are not speculative in nature as a product for beneficial reuse and is an effective substitute for the use of virgin commercial chemical products in a manufacturing process. Also, the chemical and physical comparison of the solid waste to the virgin commercial chemical solution has shown the material has not created any additional adverse impacts to public health, safety, welfare, or the environment.

5. Any other information that DEQ may require to evaluate the proposal.

No additional information required.

F. Performance Criteria:

The use of this material is productive and is not speculative. The receiving facility has a specific use for the material. As noted above, it is ultimately replacing virgin products in the manufacture of fertilizer used in agriculture.

The use will not create an adverse impact to public health, safety, welfare, or the environment. The Safety-Kleen Clackamas facility stores the material in tanks while the material is awaiting transfer to the distributor and then receiving facility. The tanks are subject to daily visual integrity inspections while they are in use. Any corrective action noted during the inspections is monitored in the facility Waste Information Network until corrected. Additionally, the material is a direct replacement for virgin material used in the manufacture of fertilizer. Therefore, the concentration of ammonium sulfate in the solution does not significantly exceed the concentration of ammonium sulfate in a comparable raw material.

This material is not a hazardous substance, and therefore its use does not result in the increase of a hazardous substance in a sensitive environment.

The material is essentially odorless and is liquid. Therefore, no objectionable odors or dust are created by managing this material at the Safety-Kleen Clackamas facility. It is not flammable, and it is managed at a facility that already manages hazardous waste, so no additional risks are being introduced to the site operation.

The Safety-Kleen Clackamas facility agrees to comply with all applicable federal, state, and local regulations that are not already addressed in the above.



WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. ASXB-RAPB1A

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # **ORR000001420** GENERATOR NAME: **Intel Corporation**
GENERATOR CODE (Assigned by Clean Harbors) **IN2067** CITY **Hillsboro** STATE/PROVINCE **OR** ZIP/POSTAL CODE **97124**
ADDRESS **2501 NE Century Blvd** PHONE: **(971) 334-4855**
CUSTOMER CODE (Assigned by Clean Harbors) **IN2067** CUSTOMER NAME: **Intel Corporation**
ADDRESS **2501 NE Century Blvd** CITY **Hillsboro** STATE/PROVINCE **OR** ZIP/POSTAL CODE **97124**

B. WASTE DESCRIPTION

WASTE DESCRIPTION: **D1X Mod 1 Ammonium Sulfate Non-Hazardous Bulk**

PROCESS GENERATING WASTE: **CHIP MANUFACTURING**

IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER? **No**

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE SOLID WITHOUT FREE LIQUID POWDER MONOLITHIC SOLID <input checked="" type="checkbox"/> LIQUID WITH NO SOLIDS LIQUID/SOLID MIXTURE % FREE LIQUID % SETTLED SOLID % TOTAL SUSPENDED SOLID SLUDGE GAS/AEROSOL	NUMBER OF PHASES/LAYERS <input checked="" type="checkbox"/> 1 2 3 TOP 0.00 % BY VOLUME (Approx.) MIDDLE 0.00 BOTTOM 0.00	VISCOSITY (If liquid present) <input checked="" type="checkbox"/> 1 - 100 (e.g. Water) 101 - 500 (e.g. Motor Oil) 501 - 10,000 (e.g. Molasses) > 10,000	COLOR clear	
	ODOR NONE <input checked="" type="checkbox"/> MILD STRONG Describe:	BOILING POINT °F (°C) ≤ 95 (≤ 35) 95 - 100 (35-38) 101 - 129 (38-54) <input checked="" type="checkbox"/> ≥ 130 (>54)	MELTING POINT °F (°C) ≤ 140 (≤ 60) 140-200 (60-93) > 200 (>93)	TOTAL ORGANIC CARBON <input checked="" type="checkbox"/> ≤ 1% 1-9% ≥ 10%
FLASH POINT °F (°C) ≤ 73 (≤ 23) 73 - 100 (23-38) 101 - 140 (38-60) 141 - 200 (60-93) <input checked="" type="checkbox"/> > 200 (>93)	pH ≤ 2 <input checked="" type="checkbox"/> 2.1 - 6.9 7 (Neutral) 7.1 - 12.4 ≥ 12.5	SPECIFIC GRAVITY ≤ 0.8 (e.g. Gasoline) 0.8-1.0 (e.g. Ethanol) 1.0 (e.g. Water) 1.0-1.2 (e.g. Antifreeze) <input checked="" type="checkbox"/> > 1.2 (e.g. Methylene Chloride)	ASH <input checked="" type="checkbox"/> < 0.1 0.1 - 1.0 1.1 - 5.0 5.1 - 20.0	BTU/LB (MJ/kg) <input checked="" type="checkbox"/> < 2,000 (<4.6) 2,000-5,000 (4.6-11.6) 5,000-10,000 (11.6-23.2) > 10,000 (>23.2) Actual:

D. COMPOSITION

(List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	MAX	UOM
AMMONIUM SULFATE	30.0000000	40.0000000	%
SODIUM SALTS	0.0000000	1.0000000	%
WATER	50.0000000	70.0000000	%

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? YES NO

If yes, describe, including dimensions:

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES ☒ NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES ☒ NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. **G07** SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. **W113**

E. CONSTITUENTS

Are these values based on testing or knowledge? ☒ Knowledge ☐ Testing

If based on knowledge, please describe in detail, the rationale applied to identify and characterize the waste material. Please include reference to Material Safety Data Sheets (MSDS) when applicable. Include the chemical or trade-name represented by the MSDS, and or detailed process or operating procedures which generate the waste.

generator knowledge CHIP MANUFACTURING

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0				<input checked="" type="checkbox"/>
D005	BARIUM	100.0				<input checked="" type="checkbox"/>
D006	CADMIUM	1.0				<input checked="" type="checkbox"/>
D007	CHROMIUM	5.0				<input checked="" type="checkbox"/>
D008	LEAD	5.0				<input checked="" type="checkbox"/>
D009	MERCURY	0.2				<input checked="" type="checkbox"/>
D010	SELENIUM	1.0				<input checked="" type="checkbox"/>
D011	SILVER	5.0				<input checked="" type="checkbox"/>
VOLATILE COMPOUNDS						
D018	BENZENE	0.5				<input checked="" type="checkbox"/>
D019	CARBON TETRACHLORIDE	0.5				<input checked="" type="checkbox"/>
D021	CHLOROBENZENE	100.0				<input checked="" type="checkbox"/>
D022	CHLOROFORM	6.0				<input checked="" type="checkbox"/>
D028	1,2-DICHLOROETHANE	0.5				<input checked="" type="checkbox"/>
D029	1,1-DICHLOROETHYLENE	0.7				<input checked="" type="checkbox"/>
D035	METHYL ETHYL KETONE	200.0				<input checked="" type="checkbox"/>
D039	TETRACHLOROETHYLENE	0.7				<input checked="" type="checkbox"/>
D040	TRICHLOROETHYLENE	0.5				<input checked="" type="checkbox"/>
D043	VINYL CHLORIDE	0.2				<input checked="" type="checkbox"/>
SEMI-VOLATILE COMPOUNDS						
D023	o-CRESOL	200.0				<input checked="" type="checkbox"/>
D024	m-CRESOL	200.0				<input checked="" type="checkbox"/>
D025	p-CRESOL	200.0				<input checked="" type="checkbox"/>
D026	CRESOL (TOTAL)	200.0				<input checked="" type="checkbox"/>
D027	1,4-DICHLOROBENZENE	7.5				<input checked="" type="checkbox"/>
D030	2,4-DINITROTOLUENE	0.13				<input checked="" type="checkbox"/>
D032	HEXACHLOROBENZENE	0.13				<input checked="" type="checkbox"/>
D033	HEXACHLOROBUTADIENE	0.5				<input checked="" type="checkbox"/>
D034	HEXACHLOROETHANE	3.0				<input checked="" type="checkbox"/>
D036	NITROBENZENE	2.0				<input checked="" type="checkbox"/>
D037	PENTACHLOROPHENOL	100.0				<input checked="" type="checkbox"/>
D038	PYRIDINE	5.0				<input checked="" type="checkbox"/>
D041	2,4,5-TRICHLOROPHENOL	400.0				<input checked="" type="checkbox"/>
D042	2,4,6-TRICHLOROPHENOL	2.0				<input checked="" type="checkbox"/>
PESTICIDES AND HERBICIDES						
D012	ENDRIN	0.02				<input checked="" type="checkbox"/>
D013	LINDANE	0.4				<input checked="" type="checkbox"/>
D014	METHOXYCHLOR	10.0				<input checked="" type="checkbox"/>
D015	TOXAPHENE	0.5				<input checked="" type="checkbox"/>
D016	2,4-D	10.0				<input checked="" type="checkbox"/>
D017	2,4,5-TP (SILVEX)	1.0				<input checked="" type="checkbox"/>
D020	CHLORDANE	0.03				<input checked="" type="checkbox"/>
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008				<input checked="" type="checkbox"/>

OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
BROMINE			<input checked="" type="checkbox"/>
CHLORINE			<input checked="" type="checkbox"/>
FLUORINE			<input checked="" type="checkbox"/>
IODINE			<input checked="" type="checkbox"/>
SULFUR			<input checked="" type="checkbox"/>
POTASSIUM			<input checked="" type="checkbox"/>
SODIUM			<input checked="" type="checkbox"/>
AMMONIA			<input checked="" type="checkbox"/>
CYANIDE AMENABLE			<input checked="" type="checkbox"/>
CYANIDE REACTIVE			<input checked="" type="checkbox"/>
CYANIDE TOTAL			<input checked="" type="checkbox"/>
SULFIDE REACTIVE			<input checked="" type="checkbox"/>

HOCs	PCBs
<input checked="" type="checkbox"/> NONE	<input checked="" type="checkbox"/> NONE
< 1000 PPM	< 50 PPM
>= 1000 PPM	>= 50 PPM
IF PCBs ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?	
YES	<input checked="" type="checkbox"/> NO

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES ☒ NO (If yes, explain)

CHOOSE ALL THAT APPLY

DEA REGULATED SUBSTANCES
POLYMERIZABLE

EXPLOSIVE
RADIOACTIVE

FUMING
REACTIVE MATERIAL

OSHA REGULATED CARCINOGENS
☒ NONE OF THE ABOVE



F. REGULATORY STATUS

YES	<input checked="" type="checkbox"/>	NO	USEPA HAZARDOUS WASTE?	
YES	<input checked="" type="checkbox"/>	NO	DO ANY STATE WASTE CODES APPLY?	
			Texas Waste Code	
YES	<input checked="" type="checkbox"/>	NO	DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?	
YES	<input checked="" type="checkbox"/>	NO	IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?	
			LDR CATEGORY:	Not subject to LDR
			VARIANCE INFO:	
YES	<input checked="" type="checkbox"/>	NO	IS THIS A UNIVERSAL WASTE?	
YES	<input checked="" type="checkbox"/>	NO	IS THE GENERATOR OF THE WASTE CLASSIFIED AS VERY SMALL QUANTITY GENERATOR (VSQG) OR A STATE EQUIVALENT DESIGNATION?	
YES		NO	IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?	
YES	<input checked="" type="checkbox"/>	NO	DOES TREATMENT OF THIS WASTE GENERATE A F008 OR F019 SLUDGE?	
YES		NO	IS THIS WASTE STREAM SUBJECT TO THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268.3(C)?	
YES	<input checked="" type="checkbox"/>	NO	DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?	
YES		NO	DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?	
YES	<input checked="" type="checkbox"/>	NO	DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 77 KPA (11.2 PSIA)?	
YES	<input checked="" type="checkbox"/>	NO	IS THIS CERCLA REGULATED (SUPERFUND) WASTE?	
YES	<input checked="" type="checkbox"/>	NO	IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?	
			Hazardous Organic NESHAP (HON) rule (subpart G)	Pharmaceuticals production (subpart GGG)
YES		NO	IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?	
YES		NO	Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?	
YES		NO	Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?	
			What is the TAB quantity for your facility?	
				Megagram/year (1 Mg = 2,200 lbs)
			The basis for this determination is: Knowledge of the Waste Or Test Data	Knowledge Testing
			Describe the knowledge:	

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:

NON HAZARDOUS, NON D.O.T. REGULATED, (AMMONIUM SULFATE SOLUTION)

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY ☒ OTHER Other

CONTAINERIZED		<input checked="" type="checkbox"/> BULK LIQUID	BULK SOLID	
<u>0-0</u> CONTAINERS/SHIPMENT				
STORAGE CAPACITY:		GALLONS/SHIPMENT: 3000.00 Min -4000.00 GAL.	SHIPMENT UOM:	TON YARD
CONTAINER TYPE:		Max	TONS/YARDS/SHIPMENT: <u>0 Min - 0 Max</u>	
PORTABLE TOTE TANK	BOX/CARTON/CASE			
CUBIC YARD BOX	DRUM			
OTHER:	DRUM SIZE:			

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

GENERATOR'S CERTIFICATION

I certify that I am authorized to execute this document as an authorized agent. I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE

NAME (PRINT)

TITLE

DATE

patrick.gottsacker@intel.com

This waste profile has been submitted using Clean Harbors' electronic signature system.

*40 CFR Sec. 264.12 required notice:

As required by Federal Resource Conservation and Recovery Act regulations found in 40 CFR Part 264.12(b) and all equivalent State hazardous waste regulations, notice is hereby provided that all Clean Harbors facilities that may be used to treat, store, and/or dispose of the hazardous waste described on this waste profile have the appropriate permits and the capacity to manage these wastes.

Please note this profile must be submitted for re-evaluation if there has been a change in the waste generating process or when there have been changes in the chemical composition or physical characteristics of the material.



ORANGE COAST ANALYTICAL, INC.

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Analytical Result Summary

Client Sample ID: Tank 7317
Lab Sample ID: AZ11277-001
Date Received: 3/30/18
Date Reported: 04/02/18

	<u>Result</u>	<u>Acceptance Criteria</u>
Ammonium Sulfate	39.4%	37% - 39%
Total Nitrogen	8.4%	7.7% - 8.2%
Sulfur (S)	9.6%	8.8% - 9.4%
Total Organic Carbons	<300	300 mg/L
pH	4.82	4.0 - 6.5
Appearance	Clear Liquid, Colorless	Clear Liquid, Light Brown/Tan Color
Specific Gravity	1.213	1.215 - 1.23
Aluminum	< 1 ppm	< 1 ppm
Copper	< 1 ppm	< 1 ppm
Iron	< 50 ppm	< 50 ppm
Manganese	< 1 ppm	< 1 ppm
Zinc	< 1 ppm	< 1 ppm
Cadmium	< 1 ppm	< 1 ppm
Chromium	< 5 ppm	< 5 ppm
Lead	< 1 ppm	< 1 ppm
Nickel	< 1 ppm	< 1 ppm



AMMONIUM SULFATE SOLUTION

Safety Data Sheet

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product/Chemical Name: Ammonium Sulfate Solution

Chemical Family: Inorganic ammonium salt

General Use: Drinking water treatment, waste water treatment, and other manufacturing applications

Company Information:

GAC Chemical Corporation

34 Kidder Point Road

Searsport, Maine 04974 U.S.A.

Phone: 207-548-2525 FAX: 207-548-2891 Toll Free: 800-266-5155

Emergency Phone:

1-800-424-9300 Chemtrec (USA)

SECTION 2. HAZARDS IDENTIFICATION

Pictogram: None required

Signal Word: WARNING

Hazard Statements: Causes eye irritation
Causes mild skin irritation

Precautionary Statements: Do not get in eyes, on skin or on clothing
Wear gloves, eye and face protection and protective clothing
IF ON SKIN: Wash with plenty of soap and water
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: get medical advice or attention
If eye irritation persists: get medical advice or attention
Collect spillage
Store in a closed container
Dispose of container in accordance with local, state, province and federal regulations.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Ammonium Sulfate Solution

Chemical Name:	Ammonium Sulfate	CAS#: 7783-20-2	(39.0 - 41.0%)
	Water	CAS#: 7732-18-5	(59.0 - 61.0%)

Synonyms: Liquid Ammonium Sulfate, Aqua Aide™ solution

Impurities: NA. No impurities or additives which are themselves classified and which contribute to the classification of the substance.

SECTION 4. FIRST AID MEASURES

Inhalation of mist or liquid:

Remove person from source of exposure to fresh air. If breathing is difficult, administer oxygen. If not breathing, start CPR. Get medical attention immediately.

Skin contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing.

If irritation or burning sensation develops get medical attention.

Eye contact:

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open.

Get medical attention if irritation persists.

Ingestion:

If fully conscious, drink as much water as can be tolerated. DO NOT induce vomiting. Get medical attention.

Most Important Symptoms/Effects:

Inhalation:

Mists may irritate nose, throat, mucous membranes, and respiratory tract.

Skin contact:

Prolonged and repeated exposure may cause mild irritation.

Eye contact:

May cause irritation. May cause pain and tearing.

Ingestion:

May cause irritation of the mouth, throat, gastrointestinal tract. May cause salivation, pain, nausea, vomiting, diarrhea.

SECTION 5. FIRE FIGHTING MEASURES

Flammability:

Product is not flammable and will not burn.

Suitable Extinguishing Media:

For fires in area use appropriate extinguishing media.

Specific Hazards Arising from the Chemical:

In a fire, dried ammonium sulfate can decompose at temperatures above 455°F (235°C) and may release ammonia and sulfur oxides which are toxic and may be flammable.

Special Protective Equipment and Precautions for Firefighters:

Wear full protective fire fighting clothing including NIOSH approved self contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products.

SECTION 6. ACCIDENTAL RELEASE MEASURES**General:**

Site specific procedures to address accidental spills are necessary as dictated by facility design, location, staffing, containment structures, and regulatory requirements. Consult engineers if needed.

Personal Precautions, Protective Equipment and Emergency Procedures:

In the event of a spill, clear unnecessary personnel from spill area. If direct contact with spilled material is likely, use personal protective equipment recommended in Section 8.

Methods and Materials for Containment and Cleaning Up:

Shut off source of leak if safe to do so. Manage spill using containment structures or inert materials and collect for reuse. Material can be captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

SECTION 7. HANDLING AND STORAGE**Incompatible Chemicals:**

Avoid contact with alkalis and basic (high pH) materials.

Containment:

To minimize the possibility of a release into the environment and contact with other incompatible chemicals, storage tanks and containers should have a dedicated liquid tight secondary containment system. Consult engineers if needed.

General Hygiene:

Do not eat, drink, take medication or smoke when direct contact is possible.

Always thoroughly wash hands after leaving a work area where contact is possible or has occurred.

Storage:

Keep storage tanks and containers closed and contents protected from dust, dirt, and moisture.

Clean storage tanks on a regular schedule based on inspection and experience.

Have storage tanks, containers, and transfer systems properly labeled for contents.

Have procedures for determining product quantity in storage tanks and for accepting deliveries.

Use tanks, transfer lines, pumps valves and process instrumentation designed for this material using approved materials of construction. Some materials commonly used are stainless steel, some plastics, and FRP. Mild steel, iron and nonferrous metals will be damaged by corrosion. Consult engineers if needed.

Temperature for Storage:

Preferred storage temperature range is 4°C-43°C (40°F-90°F).

Ventilation:

No special requirements.

Personal Protection:

If direct contact with material is likely use personal protective equipment.

SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits

Ingredient: ammonium soluble salts (nuisance dust/mist)

OSHA PEL		ACGIH TLV		NIOSH TLV		NIOSH
TWA	STEL	TWA	STEL	TWA	STEL	IDLH
15mg/m ³	none est.	10mg/m ³	none est.	none est.	none est.	none est.

Respiratory - Ventilation:

Local passive ventilation is typically used. Under normal conditions respiratory protective equipment is not needed. If work requires direct exposure to product mist, use appropriate, NIOSH approved respiratory protection. Consult engineers if necessary.

Eye - Skin wash:

Have appropriate eye wash and safety shower stations available in the work area.

Eyes:

Use protective eye glasses with side shields/goggles and face shield protection to prevent direct contact.

Skin:

Wear long sleeve shirt, full length trousers, and gloves. No open-toed footwear. For spill cleanup, use impervious gloves and boots.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid, clear to slight haze, colorless to yellow tint.

Odor: No odor

Odor Threshold: NA

pH: 2.5-8.0

Melting/Freeze point: -14°C (7°F)

Boiling point-range: 102°C - 105°C (215°F - 221°F) approx.

Flash point: NA

Evaporation rate: 1 (water=1)

Flammability: Not flammable.

Upper/lower flammability limits: NA

Vapor pressure: NA

Vapor density: NA

Relative Density (Specific Gravity): 1.224-1.235 S.G. @ 15.5°C (60°F)

Water Solubility: Complete.

Partial coefficient: n-octanol/water: NA

Auto ignition: NA

Decomposition temperature: >235°C (455°F)

Viscosity: NA

SECTION 10. STABILITY AND REACTIVITY

Reactivity:

No data available

Chemical Stability:

Product is chemically stable under normal ambient temperature and conditions while stored or used.

Possibility of Hazardous Reactions:

Product will not polymerize.

Conditions to Avoid:

Avoid elevated temperatures. Avoid Freezing. Keep away from incompatibles.

Incompatible Materials:

Strong alkalis, strong acids, strong oxidizing agents, chlorates, nitrates, hypochlorites, mild steel, iron, and non-ferrous metals. Consult engineers if necessary.

Hazardous Decomposition Products:

At temperatures above 235°C (455°F) ammonia and sulfur oxide gasses are released. These gasses are toxic, corrosive and are oxidizers. Ammonia and sulfur trioxide are fire hazards.

SECTION 11. TOXICOLOGICAL INFORMATION
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Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Ammonium sulfate (7783-20-2)

Oral LD50 Rat 2840 mg/kg

HEALTH EFFECTS**Inhalation - Acute Exposure**

Inhalation may cause slight irritation of mucous membranes.

Inhalation - Chronic Exposure

Repeated or prolonged exposure may cause irritation of the mucous membranes.

Skin Contact - Acute Exposure

May cause slight irritation.

Skin Contact - Chronic Exposure

May cause irritation.

Eye Contact - Acute Exposure

May cause irritation, pain and tearing.

Eye Contact - Chronic Exposure

May cause irritation, pain and tearing.

Ingestion - Acute Exposure

May cause irritation of the mouth, throat, gastrointestinal tract. May cause salivation, pain, nausea, vomiting, diarrhea.

Ingestion - Chronic Exposure

No data available.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic):**Ammonium sulfate (7783-20-2)**

Fish: LC50 Atlantic Salmon: 306,817 ug/L

Invertebrate: LC50 Daphnia magna: 218,400 ug/L

Persistence and Degradability:

No information available

Bioaccumulation Potential:

This product is not expected to bioaccumulate.

Mobility in Soil:

No information available.

Other Adverse Effects:

No information available

SECTION 13. DISPOSAL CONSIDERATIONS

RCRA Hazardous Waste: Not listed.

Neutralization:

No neutralization required.

Contaminated Packaging:

Packaging and storage containers that cannot be thoroughly cleaned must be disposed of in accordance with local, state, province, and federal regulations.

SECTION 14. TRANSPORTATION INFORMATION

Land (DOT), Sea (IMDG), Air (ICAO/IATA)

Identification Number: NA

Proper Shipping Name: NA

Hazard Class: NA

Packing Group: NA

Environmental Hazards: Marine pollutant: no; Hazardous substance: no

Special Precautions: None known

SECTION 15. REGULATORY INFORMATION

RCRA Hazardous Waste: Not Listed.

CERCLA Hazardous Substance: No

CERCLA Reportable Quantity (RQ): NA

SARA 311/312 Categories:

Acute (immediate) health effects: No

Chronic (delayed) health effects: No

Sudden release of pressure hazard: No

Reactivity hazard: No

Fire hazard: No

SARA 313 Toxic Chemical Listing: Not listed

SARA Extremely Hazardous Substance (EHS): Not listed

OSHA Air (29CFR 1910.10000, Table Z-1, Z-1A): Not listed

OSHA Special Regulated Substance (29CFR 1910): Not listed

California Prop 65 Chemical: No

United States TSCA Section Inventory Status: Product exempt or listed on the TSCA Inventory.

State Regulations: State specific regulations have not been determined by GAC Chemical Corporation.

Consult engineers if necessary.

SECTION 16. OTHER INFORMATION

NSF/ANSI 60 Drinking Water Treatment Chemicals:

Maximum use 60mg/L

HMIS Rating:

Health: 1

Flammability: 0

Reactivity: 0

NFPA Rating:

Health: 1

Fire: 0

Reactivity: 0

Special: NA

Preparatory Statement:

The information in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information we have available, and belief as of the publication date. The information is designed solely as guidance for handling, storage, transportation, release, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in any process unless specified in the text.

Date Sources for the SDS:

Literature, databases, practice, publications, own tests, regulations

Revision:

February 2015 replaces all earlier

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