AV-102 CATALYST AP
SAFETY DATA SHEET
Rev: 07/14/2016

Section 1: Identification

GHS Product Identifier: AV-102 Catalyst AP
Classification: Catalyst
Product Use: Industrial Use Only

Supplier
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24 HR. EMERGENCY TELEPHONE NUMBER
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Section 2: Hazards Identification

GHS Classification

Hazard Class	Category	Exposure Route
Oxi.	3	Oxidizing solid
Acute tox.	4	Acute Toxicity (Oral)
Acute tox.	4	Acute Toxicity (Dermal)
Skin irrit.	2	Skin Irritation
Eye irrit.	2	Eye Irritation/Damage
Resp. sens.	1	Respiratory Sensitization
Skin sens.	1	Skin Sensitization
STOT SE	3	Specific target organ toxicity – single exposure

GHS Label Elements
Hazard pictograms:

Signal Word:	**Danger**
Hazards Statements:	
H272	May Intensify fire; oxidizer
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
Precautionary Statements:	**Prevention:**
P210	Keep away from heat/sparks/open flames/hot surface. - No smoking.
P220	Keep/store away from clothing/combustible.
P221	Keep any precaution to avoid mixing with combustibles.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash skin and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.

P280	Wear protective gloves/protective clothing/eye protection/face.
P284	In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29CFR1910.134) or regional standards. For additional details, See Section 8 of the SDS.
	Response:
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 +P338	IF IN EYES Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P312	IF SWALLOWED: Call a poison center or doctor/physician if you feel unwell.
P312	Call a poison center or doctor/physician if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P333 + P311	If skin irritation or rash occurs: Call a poison center or doctor/physician.
P337 + P311	If eye irritation persists: Call a poison center or doctor/physician.
P342 + P311	If experiencing respiratory symptoms: Call a poison center or doctor/physician.
P362 + P364	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use sand or foam
	Storage:
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
	Disposal:
P501	Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

Hazards not otherwise classified
No specific dangers known, if the regulations/notes for storage and handling are considered.

Section 3: Composition/Information on Ingredients

Weight %	Components	CAS-No.	Classification
>98%	Ammonium Persulfate	7727-54-0	Oxidizing Solid Category 3 Acute toxicity Category 4 Oral Acute toxicity Category 4 Dermal Skin irritation Category 2 Eye irritation Category 2 Respiratory sensitization Category 1 Skin sensitization Category 1 Specific Target Organ Toxicity - single exposure Category 3

Section 4: First-Aid Measures

Description of First-Aid Measures

General advice:
Remove contaminated clothing.

If inhaled:
Move victim to fresh air. If not breathing, give artificial respiration. Get medical attention.

If on skin:
Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 20 minutes with plenty of water holding eyelids open. Get medical attention.

If swallowed:
Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth to an unconscious victim. Get medical attention.

Most important symptoms and effects, both acute and delayed:
Contact with combustible material may cause fire; Harmful if swallowed; Irritating to eyes, respiratory system and skin; May cause sensitization by inhalation and skin contact;

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media:	Dry chemical, foam, sand and soil, water spray for large fires.
Unsuitable Extinguishing Media:	Do not use CO_2 or other gas filled fire extinguishers; they will have little effect on decomposing persulfate.
Fire-fighting Procedure	Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. Prevent, by any means available, spillage from entering drains or water courses. Use water delivered as a fine spray to control fire and cool adjacent area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.
Hazardous Decomposition Products	By Fire and High Heat: Carbon dioxide (CO_2), carbon monoxide (CO), oxides of nitrogen (NOx), sulfur
Unusual Fire/Explosion Hazards	Emits toxic fumes under fire conditions. Decomposes under fire conditions to release oxygen that intensifies the fire.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures
Clear danger area. Ensure adequate ventilation. Remove ignition sources. Wear suitable personal protective clothing and equipment.

Environmental Precautions

Do not discharge into drains/surface waters/groundwater.

Methods and Material for Containment and Cleaning-Up
Use appropriate tools to put the spilled solid in suitable container for recovery or disposal, avoid raising dust.

Section 7: Handling and Storage

Precautions for Safe Handling
Avoid ingestion, inhalation, skin and eye contact. Minimize dust generation and accumulation. Handle in accordance with good industrial hygiene practice and any legal requirements.

Conditions for Safe Storage (Including Any Incompatibilities)

Storage incompatibility: Flammable/combustible material, Organic peroxides/hydroperoxides, strong alkalis, Zinc, Silver etc. Material to avoid.
Suitable materials for containers: HDPE
Storage temperature: 45°F - 95°F

Section 8: Exposure Controls/Personal Protection

Components with Occupational Exposure Limits

Ammonium Persulfate	ACGIH TLV	TWA value 0.1 mg/m^3
	OSHA PEL	Not established

Advice on system design:
Provide local exhaust ventilation to control vapors/mist.

Personal Protective Equipment

Respiratory Protection:

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hand Protection:

Chemical resistant protective gloves, Suitable materials, chloroprene rubber (Neoprene), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, fluoroelastomer (Viton), nitrile rubber (Buna N)

Eye Protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

General Safety and Hygiene Measures:

Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Wash hands before breaks and after shifts. Wear protective clothing as necessary to prevent contact. Eye wash fountains and safety showers must be easily accessible. Observe the appropriate PEL value. Wash soiled clothing immediately. Contaminated equipment or clothing should be cleaned after each use or disposed of.

Section 9: Physical and Chemical Properties

Appearance: Crystalline Solid
Odor: Odorless
Odor Threshold: Not determined
pH: 5.2 (1% solution)
Freezing Point: Not determined
Boiling Point: Decomposes
Flashpoint: Not determined
Evaporation Rate: Not determined
Flammability: Not flammable
Lower Explosion Limits: Not determined
Upper explosion limits: Not determined
Vapor Pressure: 1.47^{E-23} mmHg @ 77°F (25°C)
Vapor Density: Not determined
Relative Density: 1.98 @ 72˚F (22˚C)
Solubility in Water: 850 g/l @ 77°F (25°C)
Partition Coefficient n-octanol/water: Not determined
Auto-ignition Temperature: No evidence of combustion up to 1,112 ˚F (600˚C)
Decomposition Temperature: Not determined
Viscosity: Solid

Section 10: Stability and Reactivity

Reactivity

Oxidizing properties: oxidizer.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Use of persulfates in chemical reactions requires appropriate precautions and design considerations for pressure

and thermal relief. Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated. Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.

Conditions to avoid
Avoid heat (decomposes at 527°F (275°C)) and moisture.

Incompatible materials
Acids, bases, amines, Halides, strong reducing agents, combustible materials.

Hazardous decomposition products
Decomposition products: Oxygen which supports combustion; Sulfur oxides.

Section 11: Toxicological Information

Primary routes of exposure
Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects
Acute toxicity
Oral
Type of value: LD50
Species: rat (male/female)
Value: 740 mg/kg
Literature Data

Inhalation
Type of value: LC50
Species: rat (male/female)
Value: >2.95 mg/l
Literature Data

Dermal
Type of value: LD50
Species: rabbit (male/female)
Value: > 2,000 mg/kg
Literature Data

Assessment Other Acute Effects
Assessment of STOT single: Causes temporary irritation of the respiratory tract.

Irritation / Corrosion
Assessment of irritating effects: Irritating to respiratory system and skin.

Sensitization
Assessment of sensitization: Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. Literature data

Chronic Toxicity/Effects
Repeated Dose Toxicity
Assessment of repeated dose toxicity: No data

Genetic Toxicity
Assessment of mutagenicity: In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects. Literature Data.

Carcinogenicity
Assessment of carcinogenicity: Did not show carcinogenic effects in animal experiments.
Literature Data

Reproductive toxicity
Assessment of reproduction toxicity: No data

Teratogenicity
Assessment of teratogenicity: No data.

Development
No data

Symptoms of Exposure
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Section 12: Ecological Information

Toxicity
Aquatic Toxicity
Assessment of aquatic toxicity: Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. The product may hydrolyze. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxicity to fish
LC50 (96 h) 107.6 mg/l, Turbot
Literature data.

Aquatic invertebrates
EC50 (5d) >11 mg/l, Abra alba
Literature data

Microorganisms/Effect on Activated Sludge
The product has not been tested.

Persistence and Degradability
Assessment Biodegradation and Elimination (H2O)
Does not pertain to inorganic substances

Bioaccumulation Potential
Does not significantly accumulate in organisms. The product has not been tested.

Mobility in soil
Dissociates into ions.

Additional information
None

Section 13: Disposal Considerations

Dispose of in accordance with local, state, and federal regulations.

Section 14: Transport Information

DOT (Department of Transportation)
Proper Shipping Name: Ammonium Persulfate
Hazard Class: 5.1
UN Number: 1444
Packing Group: III
Label: Oxidizer 5.1
Placard: Oxidizer 5.1
NMFC (National Motor Freight Carriers)
Freight Class: 65

Section 15: Regulatory Information

EPCRA 311/312 (hazard categories): Acute; Fire
EPCRA 313:
CAS Number Chemical name
7727-54-0 Ammonium Persulfate
CERCLA RQ CAS Number Chemical name
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.
State regulations
State RTK CAS Number Chemical name
none
CA Prop. 65:
WARNING: None

NFPA Hazard codes:
Health : 1 - Fire: 0 - Reactivity: 1 - Special: OX
HMIS III rating
Health: 1 - Flammability: 0 – Physical Hazard13 – PPE: E (Safety goggles, gloves, protective clothing, dust and vapor respirator)

Section 16: Other Information

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