Safety Data Sheet

AV-102® Catalyst AP

SECTION 1. IDENTIFICATION

Product Identifier	AV-102 Catalyst AP
Other Means of Identification	APS, ammonium persulfate
Recommended Use	Industrial Use Only.
Restrictions on Use	Not for use in food applications.
Manufacturer/Supplier	Avanti International, 822 Bay Star Blvd, Webster, TX, 77598, USA, 281.486.5600,
Emergency Phone No.	ChemTrec 800.424.9300
Date of Preparation	March 7, 2018
Date of Last Revision	February 16, 2024

SECTION 2. HAZARD IDENTIFICATION

Classification: Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).
Oxidizing solid - Category 3; Acute toxicity (Oral) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2; Respiratory sensitization - Category 1; Skin sensitization - Category 1; Specific target organ toxicity (single exposure) - Category 3

Label Elements

Hazard pictogram:

Signal word: Danger

Hazard statements:
H272 May intensify fire: oxidizer.
H302 Harmful if swallowed.
H315 + H320 Causes skin and 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, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P220 Keep or store away from clothing and other combustible materials.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P221 Take any precaution to avoid mixing with combustibles.
P280 Wear protective gloves/eye protection/face protection.
P264 Wash hands and skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P284 In case of inadequate ventilation wear respiratory protection (NIOSH approved air-purifying respirator with N100, R100, or P100 filter).

Response:	P302 + P352	IF ON SKIN: Wash with plenty of water/ Soap
	P304 + P340	IF INHALED: Remove person to fresh air and keep 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.
	P312	Call a POISON CENTRE or doctor if you feel unwell.
	P330	Rinse mouth.
	P332 + P313	If skin irritation occurs: Get medical advice or attention.
	P337 + P313	If eye irritation persists: Get medical advice or attention.
	P362 + P364	Take off contaminated clothing and wash it before reuse.
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 local, regional, national and international regulations.

Other Hazards

Other hazards: None known

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Ammonium persulfate	7727-54-0	100	APS	

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

SECTION 4. FIRST AID MEASURES

First Aid Measures

General advice:	Get medical advice or attention if you feel unwell or are concerned.
Eye contact:	Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.
Skin contact:	Avoid direct contact. Wear chemical protective clothing if necessary. Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes.
Inhalation:	Move to fresh air. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor.
Ingestion:	Rinse mouth with water. Call a Poison Centre or doctor if you feel unwell.

Most Important Symptoms and Effects, Acute and Delayed

Symptoms include slight redness and swelling. Skin sensitizer. May cause an allergic skin reaction in some people.

Immediate Medical Attention and Special Treatment

Target organs Respiratory system

Medical Conditions Aggravated by Exposure None known

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media

Suitable:	Not combustible. Use extinguishing agent suitable for surrounding fire. Use flooding quantities of water spray or fog.
Unsuitable:	None known

Specific Hazards Arising from the Product
Oxidizer. Releases oxygen to create an oxygen-rich atmosphere. Will cause combustible materials to ignite more readily. May intensify fire. Closed containers may rupture violently when heated releasing contents.
Very toxic carbon monoxide, carbon dioxide; corrosive, flammable ammonia; flammable hydrogen; corrosive, oxidizing nitrogen oxides; corrosive sulfur oxides.

Special Protective Equipment and Precautions for Firefighters

Protective equipment: Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

Special firefighting procedures: Use extreme caution. Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases. Oxidizer. Prevent contact with flammable and combustible materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures
Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental precautions: Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up
Avoid generating dust. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal. Store recovered product in suitable containers that are: covered.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling: Obtain special instructions before use. Avoid breathing in this product. Avoid repeated or prolonged skin contact. Do not swallow. Avoid generating dusts. If the product is transferred to another container, ensure new container is suitable for the product. General hygiene considerations: do NOT eat, drink, or store food in work areas. Do NOT smoke in work areas. Wash hands thoroughly after handling this product and before eating, using the washroom, or leaving work area.

Conditions for safe storage: Store in an area that is: cool, dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters	**ACGIH TLV®**		**OSHA PEL**		**AIHA WEEL**	
Chemical Name	**TWA**	**STEL**	**TWA**	**STEL**	**8-hr TWA**	**TWA**
Ammonium persulfate	0.1 mg/m3					

Recommended monitoring procedures:

Appropriate engineering controls: Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eyes/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US).

Skin/hand/body protection: Wear chemical protective clothing e.g. gloves, aprons, boots. Wear a chemical splash suit and respiratory protection.
Chemical Resistant Gloves: Suitable materials are: butyl rubber, nitrile rubber. Chemical Resistant Suit: Tychem® SL (Saranex™).

Respiratory protection:	Wear a NIOSH approved air-purifying respirator with N100, R100, or P100 filter(s). And wear a NIOSH approved air-purifying respirator with an organic vapour cartridge. Either full-face piece or half-face piece with splash goggles.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White crystalline crystals. Particle Size: Not available
Odor:	Odourless
Odor threshold:	Not available
pH:	3.2 (10% solution)
Melting/freezing point:	248 ºF (120 ºC) (melting)
Initial boiling point and boiling range:	Not applicable
Flash point:	Not applicable
Flash point method:	Not applicable
Evaporation rate:	Not available
Flammability (solid, gas):	Will not burn
Upper/lower flammability or explosive limits:	Not applicable (upper); Not applicable (lower)
Vapor pressure:	Not available
Vapor density (air=1):	Not available
Relative density (water=1):	1.982
Solubility:	835 g/L (Very soluble) in water; Not available (in other liquids)
Partition coefficient n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	248 ºF (120 ºC)
Viscosity:	Not applicable (kinematic); Not applicable (dynamic)
Other Information	
Physical State	Solid
Molecular Formula	H8N2O8S2
Molecular Weight	228.2
Surface Tension	Not available
Critical Temperature	Not available
Electrical Conductivity	Not available
Vapour Pressure at 50° C	Not available
Saturated Vapour Concentration	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Oxidizer
Chemical stability:	Normally stable

Possibility of hazardous reactions:	Reacts violently in the presence of alkaline conditions (high pH).
Conditions to avoid:	Water, moisture, or humidity. Prolonged contact with water, moisture, or humidity. Heat.
Incompatible materials:	Reacts violently with: amines (e.g. triethylamine), alkanolamines (e.g. triethanolamine), ammonia, metals (e.g. aluminum), oxidizing agents (e.g. peroxides), reducing agents (e.g. hydroquinone), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide). Corrosive to: aluminum alloys, zinc, iron, carbon steel, copper, copper alloys (e.g. brass and/or bronze), zinc alloys.
Hazardous decomposition products:	Oxygen (a strong oxidizer); corrosive sulfur oxides; corrosive, oxidizing nitrogen oxides; corrosive, flammable ammonia.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation; skin contact; eye contact; ingestion.
Interactive effects:	No information was located.

Product Name	LC50	LD50 (oral)	LD50 (dermal)
Ammonium persulfate		689 mg/kg (rat)	

*Based on similar product

Skin corrosion or irritation:	Human experience shows moderate or severe irritation. Animal tests show very mild irritation.
Serious eye damage or irritation:	Animal tests show serious eye irritation.
Respiratory and/or skin sensitization:	Skin sensitizer. In sensitized people, contact with a very small amount of product can cause an allergic reaction. Symptoms include redness, rash, itching and swelling. This reaction can spread from the hands or arms to the face and body. Repeated exposure will make the reaction worse. No information was located for respiratory sensitization.
Germ cell mutation:	No information was located.

Carcinogenicity:

Chemical Name	IARC	ACGIH®	NTP	OSHA
Ammonium persulfate	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive toxicity:	Development of Offspring – No information was located. Sexual Function and Fertility - No information was located. Effects on or via Lactation - No information was located.
Aspiration hazard:	Symptoms may include coughing, choking, shortness of breath, difficult or rapid breathing, and wheezing.

Specific Target Organ Toxicity

Single exposure:	Inhalation - May cause nose and throat irritation, lung injury. Skin Absorption - Causes Symptoms may include redness, rash, swelling and itching. Ingestion - Causes irritation of the mouth, throat, and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.
Repeated exposure:	No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Data
Harmful to aquatic life.

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Ammonium persulfate	76 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	120 mg/L (Daphnia magna (water flea); 48-hour)		

Persistence and degradability:	No ingredient of this product or its degradation products is known to be highly persistent.
Bioaccumulative potential:	This product and its degradation products are not known to bioaccumulate.
Mobility in soil:	No information was located.
Other adverse effects:	There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of contents and container in accordance with local, regional, national and international regulations.

Consult your local or regional authorities.
Refer to section 7 for handling precautions and to section 8 for information on personal protective equipment.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group	EmS
US DOT	1444	Ammonium Persulfate (Ammonium persulfate)	5.1	III	
Canadian TDG	1444	Ammonium Persulfate (Ammonium persulfate)	5.1	III	
IMDG	1444	Ammonium Persulfate (Ammonium persulfate)	5.1	III	F-A, S-Q
IATA	1444	Ammonium Persulfate (Ammonium persulfate)	5.1	III	

Environmental Hazards Not applicable

Special Precautions No applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15. REGULATORY INFORMATION

United States
TSCA 8(B) inventory: All ingredients are listed on TSCA inventory or are exempted.

California Proposition 65

Warning!
This product contains chemicals known to the state of California to cause cancer, at concentration lower 0.1%. This product contains up to 0.5% of a chemical known to the state of California to cause birth defect or other reproductive harm.

Canada
CEPA DSL: All the ingredients are on the Domestic Substance List of Environment Canada

SECTION 16. OTHER INFORMATION

NFPA Rating:	Health - 1	Flammability - 0	Instability - 1
	Special Hazard - Oxidizing		
SDS Prepared By:	Avanti International		
Date of Preparation:	March 7, 2018		
Date of Last Revision:	February 16, 2024		
Revision Indicators:	Not applicable		

Key to Abbreviations:

ACGIH®	American Conference of Governmental Industrial Hygienists
IARC	International Agency for Research on Cancer
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	US Occupational Safety and Health Administration
RTECS®	Registry of Toxic Effects of Chemical Substances

References: CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”).