

SAFETY DATA SHEET

1. Identification

Product identifier	Modified Asphalt	
Other means of identification		
SDS number	212-GHS	
Synonyms	AC-20P, AC-20R, MB, GTR, PBA, LLP, PG, R Rubber Crack Sealant	RAC - MODIFIED ASPHALT GRADES, Asphalt
Recommended use	sealing applications; coatings; or other engine result in higher exposures and require addition equipment.	nighway paving applications; waterproofing and ering applications. Use in other applications may nal engineering controls and personal protective
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/	Distributor information	
Manufacturer/Supplier General Assistance E-Mail	Valero Marketing & Supply Company and Affil One Valero Way San Antonio, TX 78269-6000 210-345-4593 CorpHSE@valero.com	iates
Contact Person	Industrial Hygienist	
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)	
2. Hazard(s) identification		
Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Causes skin irritation. Causes eye irritation. So organs. May cause damage to organs (Lungs)	uspected of causing cancer. May cause damage to) through prolonged or repeated exposure.
Precautionary statement		
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.	
Response	If exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell. If swallowed: Rinse mouth. Do not induce vomiting. If on skin: Wash with plenty of water. If skin irritation occurs, seek medical advice/attention. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before re-use. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.	
Storage	Store locked up.	

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Modified Asphalt

3. Composition/information on ingredients

Mixtures

media

Chemical name		CAS number	%
Asphalt		8052-42-4	0 - 100
Vaccum tower bottoms		64741-56-6	0 - 100
Distillates, petroleum residues, vaccum		68955-27-1	0 - 15
Butadiene-styrene Rubber		9003-55-8	0 - 10
Copolymer of ethylene and octane		26221-73-8	0 - 10
Maleic anhydride modified polypropylene		Not Applicable	0 - 10
Sulfur		7704-34-9	0 - 10
Calcium oxide		1305-78-8	0 - 5
Polyphosphoric acid		8017-16-1	0 - 2
Bis(2-ethylhexyl) phthalate		117-81-7	<0.1
Hydrogen sulfide		7783-06-4	<0.1
Polycyclic Aromatic Hydrocarbons		130498-29-2	<0.1
. First-aid measures	Move to fresh air. If breathing is difficult, give oxyg medical attention.	en. If not breathing, giv	e artificial respiratior
kin contact	In case of contact with hot or molten product, cool attention. Do not attempt to remove molten product Remove contaminated clothing and shoes. Get me Wash clothing separately before reuse. Destroy or pressure injection under the skin occurs, always so	ct from skin because ski edical attention if irritation thoroughly clean conta	n will tear easily. on develops or persi
ye contact	Immediately flush eyes with plenty of water for at I present and easy to do. Continue rinsing. Get med		ve contact lenses, if
gestion	Rinse mouth thoroughly. Do not induce vomiting w give mouth-to-mouth resuscitation. If vomiting occ does not get into the lungs. Never give anything by having convulsions. Get medical attention immedia	urs, keep head low so tl y mouth to a victim who	hat stomach content
ost important /mptoms/effects, acute and elayed	Irritation of nose and throat. Irritation of eyes and r Unconsciousness. Corneal damage. Narcosis. De Edema. Conjunctivitis. Proteinuria. Defatting of th	nucous membranes. Sk crease in motor functior	
dication of immediate edical attention and special eatment needed	In case of shortness of breath, give oxygen. Keep Symptoms may be delayed.	victim warm. Keep victi	m under observatior
eneral information	If exposed or concerned: get medical attention/adv the material(s) involved, and take precautions to p to the doctor in attendance. Wash contaminated c	rotect themselves. Show	
Fire-fighting measures			
itable extinguishing media	Water spray. Water fog. Dry chemical powder. Ca	rbon dioxide (CO2).	
nsuitable extinguishing	Do not use water jet.		

Specific hazards arising from the chemical	Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
6. Accidental release meas	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Extinguish all flames in the vicinity. Keep combustibles (wood, paper, oil, etc.) away from spilled material.
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
	Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Cover with plastic sheet to prevent spreading. Collect spillage. Following product recovery, flush area with water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Clean surface thoroughly to remove residual contamination. Wipe up with absorbent material (e.g. cloth, fleece).
Environmental precautions	If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.
7. Handling and storage	
Precautions for safe handling	Wear personal protective equipment. Avoid breathing mist or vapor from heated material. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Do not handle, store or open near an open flame or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use only non-sparking tools. When using, do not eat, drink or smoke. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities	Material is normally stored in closed tanks at 250 to 375F. Do not handle, store or open near an open flame or sources of ignition. Protect material from direct sunlight. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.
8. Exposure controls/perso	onal protection
Occupational exposure limits	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Туре	Value	
Calcium oxide (CAS 1305-78-8)	PEL	5 mg/m3	

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US. OSHA Table Z-2 (29 CFR 1910.1000)

	Туре		Value	
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm		
US. ACGIH Threshold Limit \	/alues			
Components	Туре	Value	Form	
Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fraction.	
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3		
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm		
	TWA	1 ppm		
Vaccum tower bottoms (CAS 64741-56-6)	TWA	0.5 mg/m3	Inhalable fraction.	
US. NIOSH: Pocket Guide to	Chemical Hazards			
Components	Туре	Value	Form	
Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.	
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3		
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3		
		10 ppm		
Vaccum tower bottoms (CAS 64741-56-6)	Ceiling	5 mg/m3	Fume.	
logical limit values	No biological exposure limits noted f	or the ingredient(s).		
propriate engineering trols vidual protection measures, s Eye/face protection	Provide adequate general and local ventilation, or other engineering cont limits. such as personal protective equipn Wear safety glasses. If splash poten	rols to control airborne levels b	elow recommended exposu	
			or onormour goggioo.	
Skin protection Hand protection	Avoid exposure - obtain special instr	uctions before use Wear prote	ctive aloves. Protective alov	
Other	Avoid exposure - obtain special instructions before use. Wear protective gloves. Protective gloves			
••	Wear chemical-resistant, impervious gloves. Flame retardant protective clothing is recommended Wear a NIOSH-approved (or equivalent) respirator as needed.			
Respiratory protection				
Thermal hazards	Wear appropriate thermal protective			
neral hygiene siderations	Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.			
Physical and chemical p	roperties			
bearance	Dark brown to black liquid at normal	use temperatures above 300F.	Semi-solid at 70F.	
Physical state	Liquid.			
Form	Semi-Solid at 70F			
Color	Brown/black.			
or	Strong petroleum.			
or threshold	Not available.			
	Not available.			
	> 134 96 °F (> 57 2 °C)			
ting point/freezing point al boiling point and boiling	> 134.96 °F (> 57.2 °C) 700 - 1100.1 °F (371.11 - 593.39 °C)			
ting point/freezing point				

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Flammability (solid, gas)	Not available.
Upper/lower flammability or exp	losive limits
Flammability limit - lower (%)	> 0.9
Flammability limit - upper (%)	< 7
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0.01 kPa @ 20 °C
Vapor density	> 1.6 (Air = 1)
Relative density	1 - 1.2 (Water=1)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	> 600.1 °F (> 315.61 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
10. Stability and reactivity	
Reactivity	Not available.

Reactivity	Not available.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

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Ingestion	May be harmful if swallowed.
Inhalation	In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	Causes eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.

Information on toxicological effects

Acute toxicity	Based on available data, the clas	Based on available data, the classification criteria are not met.	
Components	Species	Test Results	
Hydrogen sulfide (CAS 77	83-06-4)		
Acute			
Inhalation			
LC50	Monkey	0.7 mg/l, 35 Minutes	
	Mouse	1.5 mg/l, 18 Minutes	
		0.38 mg/l, 410 Minutes	
		0.096 mg/l, 804 Minutes	
		> 0.024 mg/l, 960 Minutes	
	Rat	1.5 mg/l, 14 Minutes	

Components	Species	Test Results
		> 0.38 mg/l, 960 Minutes
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes eye irritation.	
Respiratory or skin sensitizatio	n	
Respiratory sensitization	Based on available dat	a, the classification criteria are not met.
Skin sensitization	Causes skin burns.	
Germ cell mutagenicity	Based on available dat	a, the classification criteria are not met.
Carcinogenicity	repeated skin contact v repeated exposures by sites of the body. The Working Group ha their fume condensates	cancer. Contains polycyclic aromatic compounds (PACs). Prolonged and/or vith certain PACs has been shown to cause skin cancer. Prolonged and/or inhalation of certain PACs may also cause cancer of the lung and of other s classified occupational exposures to straight-run bitumens/asphalts and a during road paving as "possibly carcinogenic to humans" (Group 2B). to straight-run asphalts and their emissions during road paving: 2B o humans.
IARC Monographs. Overall	Evaluation of Carcinoge	enicity
Asphalt (CAS 8052-42-4) Vaccum tower bottoms (2B Possibly carcinogenic to humans. 2B Possibly carcinogenic to humans.
Reproductive toxicity	Based on available dat	a, the classification criteria are not met.
Specific target organ toxicity - single exposure	May cause damage to organs: Lungs.	
Specific target organ toxicity - repeated exposure	May cause damage to organs (Lungs) through prolonged or repeated exposure.	
Aspiration hazard	Based on available dat	a, the classification criteria are not met.
Further information	Symptoms may be dela	ayed.
12. Ecological information	n	

ological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

	1 2	5 1 1	5 5
Components		Species	Test Results
Hydrogen sulfide (CAS 7783	-06-4)		
Aquatic			
Fish	LC50	Bluegill (Lepomis macrochirus)	0.009 mg/l, 96 hours
ersistence and degradability	Not available.		
oaccumulative potential	Not available.		
obility in soil	Not available.		
ther adverse effects	Not available.		

13. Disposal considerations

Disposal instructions	Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste.		
Local disposal regulations	Dispose of in accordance with local regulations.		
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F		
US RCRA Hazardous Waste	U List: Reference		
Hydrogen sulfide (CAS 7	783-06-4) U135		
Waste from residues / unused products	Dispose of in accordance with local regulations.		
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.		

14. Transport information

UN number UN3257

UN proper shipping name Transport hazard class(es)	Elevated temperature liquid, n.o.s. (Asphalt)					
Class	9					
Subsidiary risk						
Packing group	III					
Special precautions for user	· Read safety	Read safety instructions, SDS and emergency procedures before handling.				
Special provisions	IB1, T3, TP3	, TP29				
Packaging exceptions	None					
Packaging non bulk	None					
Packaging bulk	173, 247					
ΙΑΤΑ						
UN number	UN3257		<i></i>			
UN proper shipping name	Elevated tem	perature liquid,	n.o.s. (Asphalt)			
Transport hazard class(es)	_					
Class	9					
Subsidiary risk	-					
Packing group	Not applicab	e.				
Environmental hazards	No.					
ERG Code Special precautions for user	9L Bood cofety	instructions SD	S and amorgancy prov	oduras bafara bandlina		
IMDG	Reau Salely		o and emergency proc	Jedules belore handling		
UN number	UN3257					
UN proper shipping name		perature liquid	n.o.s. (Asphalt)			
Transport hazard class(es)		ipolataro ilquia,				
Class	9					
Subsidiary risk	-					
Packing group	Ш					
Environmental hazards						
Marine pollutant	No.					
EmS	F-A, S-P*					
Special precautions for user	· Read safety	instructions, SD	S and emergency proc	cedures before handling].	
Transport in bulk according to	Not applicab	e.				
Annex II of MARPOL 73/78 and						
the IBC Code						
15. Regulatory information	ı					
US federal regulations						
TSCA Section 12(b) Export I	Notification (4	0 CFR 707, Su	bpt. D)			
Not regulated.						
US. OSHA Specifically Regu	lated Substar	nces (29 CFR 1	910.1001-1050)			
Not listed.						
CERCLA Hazardous Substa	nce List (40 C	FR 302.4)				
Asphalt (CAS 8052-42-4)			LISTED			
Hydrogen sulfide (CAS 77	,		LISTED			
Superfund Amendments and Re		•	ARA)			
Hazard categories	Immediate H Delayed Haz					
	Fire Hazard - No					
	Pressure Ha	zard - No				
	Reactivity Ha	azard - No				
SARA 302 Extremely hazard						
Chemical name CA	S number	Reportable	Threshold	Threshold	Threshold	
		quantity	planning quantity	planning quantity, lower value	planning quantity,	
Hydrogen sulfide 778	3-06-4	100	500 lbs		upper value	
		100				
SARA 311/312 Hazardous chemical	Yes					
Chemica						

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act Not regulated.

(SDWA) US state regulations

WARNING: This product contains chemicals known to the State of California to cause cancer.

US. Massachusetts RTK - Substance List

Asphalt (CAS 8052-42-4) Calcium oxide (CAS 1305-78-8) Hydrogen sulfide (CAS 7783-06-4) Sulfur (CAS 7704-34-9) Vaccum tower bottoms (CAS 64741-56-6)

US. New Jersey Worker and Community Right-to-Know Act

Asphalt (CAS 8052-42-4) Calcium oxide (CAS 1305-78-8) Hydrogen sulfide (CAS 7783-06-4) Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2) Sulfur (CAS 7704-34-9) Vaccum tower bottoms (CAS 64741-56-6)

US. Pennsylvania Worker and Community Right-to-Know Law

Asphalt (CAS 8052-42-4) Calcium oxide (CAS 1305-78-8) Hydrogen sulfide (CAS 7783-06-4) Polycyclic Aromatic Hydrocarbons (CAS 130498-29-2) Sulfur (CAS 7704-34-9) Vaccum tower bottoms (CAS 64741-56-6)

US. Rhode Island RTK

Hydrogen sulfide (CAS 7783-06-4)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Asphalt (CAS 8052-42-4) Bis(2-ethylhexyl) phthalate (CAS 117-81-7) Vaccum tower bottoms (CAS 64741-56-6)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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16. Other information, including date of preparation or last revision				
Issue date	27-June-2013			
Revision date	05-May-2014			
Version #	02			
NFPA Ratings				
References	ACGIH EPA: AQUIRE database NLM: Hazardous Substances Data Base US. IARC Monographs on Occupational Exposures to Chemical Agents HSDB® - Hazardous Substances Data Bank IARC Monographs. Overall Evaluation of Carcinogenicity National Toxicology Program (NTP) Report on Carcinogens ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices			
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