



MSDS041

Bitrex Qualitative Fit Test Apparatus

MATERIAL SAFETY DATA SHEET

Chemical Product and Company Identification

LABEL IDENTIFIER: Bitrex Qualitative Fit Test Apparatus

PRODUCT IDENTIFIER: P/N 697444, Bitrex Qualitative Fit Test Apparatus
P/N 697445, Solution, Sensitivity, for Bitrex Qualitative Fit Testing
P/N 697446, Solution, Fit Test, for Bitrex Qualitative Fit Testing

COMPANY IDENTIFICATION: MINE SAFETY APPLIANCES COMPANY
1100 Cranberry Woods Drive
Cranberry Township, PA 160676
CUSTOMER SERVICE: 1-800-MSA-2222 (8:30 a.m. – 5:00 p.m., USA local time)
EMERGENCY: 1-800-255-3924 (CHEM-TEL, INC.)

Vendor Information

Two (2) Material Safety Data Sheets for Bitrex Qualitative Fit Test Apparatus as furnished by Allegro Industries are attached. (Bitrex Sensitivity Solution, P/N 2041-11K, Bitrex Test Solution #2, P/N 2041-12K) - (3 Pages each)

Allegro Industries. MSDS REVISION DATE: P/N 2041-11K 11/07/2013
MSDS REVISION DATE: P/N 2041-12K 11/07/2013

Other Information

WARNING: This is a hazardous chemical product. By following the directions and warnings provided with this product, the hazards associated with the use of this product can be greatly reduced but never entirely eliminated. Mine Safety Appliances Company makes no warranties, expressed or implied, with respect to this product and EXPRESSLY DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Users assume all risks in handling, using or storing this product.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION AND GENERAL INFORMATION			
P/N#:	2041-11K		<u>NFPA Code</u>
Nomenclature:	Bitrex Fit Sensitivity Solution #1		H 2
Company Name:	Allegro Industries		F 1
Address:	1360 Shiloh Church Rd		R 0
	Piedmont, SC 29673		O 0
	864-846-8740		
	Chemtrac: 800-424-9300		
2. COMPOSITION			
Product Name:	Denatonium benzoate		
Chemical Name:	Ammonium, Benzyl diethyl ((2,6-xylylcarbamoyl)methyl)-, benzoate		
Chemical Family:	N/A		
Synonyms:	N-[2-[2,6-Dimethylphenyl]amino]-2-oxoethyl]-N, N-diethylbenzenemethanaminium benzoate; Benzenemethanaminium, N-(2-((2,6-dimethylphenyl)amino)-2-oxoethyl)-N-N-diethyl-, benzoate; ((2,6-Xylylcarbamoyl)methyl diethyl benzyl ammonium benzoate		
Ingredient:	Water	Sodium chloride	Denatonium benzoate
CAS Number:	7732-18-5	7647-14-5	3734-33-6
Percent:	95%	4.98%	< .02%
Molecular Weight:	446.59 g/mole		
Chemical Formula:	C28H34N2O3		
Notes:	N/A		
3. HAZARDS IDENTIFICATION			
Routes of Exposure:	Inhalation, ingestion.		
Target Organs:	N/A		
Chronic Exposure:	Repeated or prolonged exposure is not known to aggravate medical condition.		
Acute Exposure:	Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of ingestion, of inhalation.		
Aggr. of Pre-Ex Cond:	N/A		
Carcinogenic Effects:	Not available.		
Mutagenic Effects:	Not available.		
Teratogenic Effects:	Not available.		
Developmental Toxicity:	Not available.		
4. FIRST AID MEASURES			
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.		
Skin Contact:	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.		
Eye Contact:	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.		
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.		
5. FIRE FIGHTING MEASURES			
Fire Hazards:	As with most organic solids, fire is possible at elevated temperatures.		
Fire Extinguisher:	Small Fire- Use DRY chemical powder.		
	Large Fire- Use water spray, fog, or foam. Do not use water jet.		
Explosion Hazards:	See below.		
Flash Point:	N/A		
Flammable Limits:	N/A		
Volatile (% by volume):	N/A		
Exp. Limits (Vol % in air):	N/A		
Flammability of Product:	May be combustible at high temperature.		
Auto Ignition Temperature:	N/A		
Special Fire Fighting Proc:	N/A		
PPE for Fire Fighters:	N/A		
Products of Combustion:	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).		
Fire Hazards in Presence of Various Substances:	Slightly flammable to flammable in presence of heat.		
Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of mechanical impact: Not available.		
	Risk of explosion of the product in presence of static discharge: Not available.		
	Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.		
Notes:	None.		
6. ACCIDENTAL RELEASE MEASURES			
Procedure for Spill/Leak:	Small Spill- Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.		
	Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.		
Waste Disposal:	Waste must be disposed of in accordance with Federal, State, and Local Environmental Control Regulations.		
7. HANDLING AND STORAGE			
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area.		
Precautions:	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest.		
	If ingested, seek medical advice immediately and show the container or label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.		
Shelf Life:	5 yrs.		
PPE:	Wear suitable protective clothing.		
Notes:	None.		

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8. EXPOSURE CONTROLS	
PPE:	Safety glasses or splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill:	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Inhalation:	N/A
Skin:	N/A
Eye:	N/A
Ingestion:	N/A
Ventilation:	N/A
Engineering Controls:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Work/Hygienic Practices:	Wash hands after handling this product.
Exposure Limits:	N/A
Notes:	None.
9. PHYSICAL AND CHEMICAL PROPERTIES	
Color/Appearance/Odor:	Odorless white liquid with a bitter taste.
Boiling Point	N/A
Melting Point	163°C (325.4°F)-170°C
Critical Temperature:	N/A
Specific Gravity (H ₂ O=1):	N/A
Refractive Index:	N/A
Volatility:	N/A
Evaporative Rate :	N/A
Vapor Density(Air=1):	N/A
Vapor Pressure:	N/A
Odor Threshold:	N/A
Water/Oil Dist. Coeff:	The product is more soluble in oil; log (oil/water) =0.9
Iconicity (in Water):	N/A
Solubility in Water:	Partially soluble in water. Solubility in water: 45 g/l
10. STABILITY AND REACTIVITY	
Stability:	The product is stable.
Instability Temperature:	N/A
Conditions of Instability:	Excess heat, incompatible materials, dust generation.
Incompatibility with Various Substances:	Reactive with oxidizing agents.
Corrosivity:	Non-corrosive in presence of glass.
Special Remarks on Reactivity:	N/A
Special Remarks on Corrosivity:	N/A
Hazardous Polymerization:	Will not occur.
11. TOXICOLOGICAL INFORMATION	
Routes of Entry:	Inhalation. Ingestion.
Toxicity to Animals:	Acute oral toxicity (LD50): 508 mg/kg [Rabbit (Registry of Toxic Effects of Chemical Substances)]. Acute dermal toxicity (LD50): >2000 mg/kg [Rabbit].
Chronic Effects on Humans:	N/A
Other Toxic Effects on Humans:	Hazardous in case of skin contact (irritant). Slightly hazardous in case of ingestion, of inhalation.
Special Remarks on Toxicity to Animals:	LD50/Conc 50% Kill: LD50[Rat] -Route: Oral; Dose: 640 to 841 mg/kg (Information from Johnson Matthey Group)
Special Remarks on Chronic Effects on Humans:	N/A
Special Remarks on other Toxic Effects on Humans:	Acute Potential Health Effects: Skin: Causes skin irritation. It may be absorbed through the skin, but not in significant or harmful amounts. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract irritation. May cause allergic reaction in susceptible people. Ingestion: May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea. May affect behavior/central nervous system (somnolence, tremor, ataxia). May cause allergic reaction to susceptible people.
Notes:	N/A
12. ECOLOGICAL INFORMATION	
Ecotoxicity:	Ecotoxicity in water (LC50): >1000 mg/l 96 hours [Fish(Trout)]
BOD5 and COD:	N/A
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation:	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation:	N/A

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13. DISPOSAL CONSIDERATIONS

Waste must be disposed of in accordance in Federal, State, and Local Environmental Control Regulations.

14. TRANSPORT INFORMATION

DOT Classification: Not a DOT controlled material (United States).
Proper Shipping Name: N/A
Hazard Class: N/A
Transport Emergency Card: N/A
Packing Group: N/A
UN Number: N/A
Reportable Quantity: N/A
Notes: N/A

15. REGULATORY INFORMATION

TSCA Registered: TSCA 8(b) inventory: Denatonium benzoate
California Proposition 65: California Prop 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
Warning: California Prop 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.
EINCS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS) No. 223-095-2.
Canada: Listed on Canadian Domestic Substance List (DSL)
China: Listed on National Inventory.
Japan: Listed on National Inventory. (ENCS)
Korea: Listed on National Inventory. (KECI)
Philippines: Listed on National Inventory. (PICCS)
Australia: Listed on ACIS.
FDA Approved: N/A
ICSC: N/A

16. OTHER INFORMATION

Other Special Considerations: Aversive agent and denaturant.

DISCLAIMER: THE INFORMATION FURNISHED HEREIN IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST DATA CURRENTLY AVAILABLE TO US. NO WARRANTY, EXPRESSED OR IMPLIED IS MADE AND ALLEGRO INDUSTRIES ASSUMES NO LEGAL RESPONSIBILITY OR LIABILITY RESULTING FROM ITS USE.

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION AND GENERAL INFORMATION			
P/N#:	2041-12K		<u>NFPA Code</u>
Nomenclature:	Bitrex Fit Test Solution #2		H 2
Company Name:	Allegro Industries		F 1
Address:	1360 Shiloh Church Rd		R 0
	Piedmont, SC 29673		O 0
	864-846-8740		
	Chemtrac: 800-424-9300		
2. COMPOSITION			
Product Name:	Denatonium benzoate		
Chemical Name:	Ammonium, Benzyl diethyl ((2,6-xylylcarbamoyl)methyl)-, benzoate		
Chemical Family:	N/A		
Synonyms:	N-[2-[2,6-Dimethylphenyl]amino]-2-oxoethyl]-N, N-diethylbenzenemethanaminium benzoate; Benzenemethanaminium, N-(2-((2,6-dimethylphenyl)amino)-2-oxoethyl)-N-N-diethyl-, benzoate; ((2,6-Xylylcarbamoyl)methyl diethyl benzyl ammonium benzoate		
Ingredient:	Water	Sodium chloride	Denatonium benzoate
CAS Number:	7732-18-5	7647-14-5	3734-33-6
Percent:	95%	4.8%	< .2%
Molecular Weight:	446.59 g/mole		
Chemical Formula:	C28H34N2O3		
Notes:	N/A		
3. HAZARDS IDENTIFICATION			
Routes of Exposure:	Inhalation, ingestion.		
Target Organs:	N/A		
Chronic Exposure:	Repeated or prolonged exposure is not known to aggravate medical condition.		
Acute Exposure:	Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of ingestion, of inhalation.		
Aggr. of Pre-Ex Cond:	N/A		
Carcinogenic Effects:	Not available.		
Mutagenic Effects:	Not available.		
Teratogenic Effects:	Not available.		
Developmental Toxicity:	Not available.		
4. FIRST AID MEASURES			
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.		
Skin Contact:	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.		
Eye Contact:	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.		
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.		
5. FIRE FIGHTING MEASURES			
Fire Hazards:	As with most organic solids, fire is possible at elevated temperatures.		
Fire Extinguisher:	Small Fire- Use DRY chemical powder.		
	Large Fire- Use water spray, fog, or foam. Do not use water jet.		
Explosion Hazards:	See below.		
Flash Point:	N/A		
Flammable Limits:	N/A		
Volatile (% by volume):	N/A		
Exp. Limits (Vol % in air):	N/A		
Flammability of Product:	May be combustible at high temperature.		
Auto Ignition Temperature:	N/A		
Special Fire Fighting Proc:	N/A		
PPE for Fire Fighters:	N/A		
Products of Combustion:	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).		
Fire Hazards in Presence of Various Substances:	Slightly flammable to flammable in presence of heat.		
Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of mechanical impact: Not available.		
	Risk of explosion of the product in presence of static discharge: Not available.		
	Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.		
Notes:	None.		
6. ACCIDENTAL RELEASE MEASURES			
Procedure for Spill/Leak:	Small Spill- Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.		
	Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.		
Waste Disposal:	Waste must be disposed of in accordance with Federal, State, and Local Environmental Control Regulations.		
7. HANDLING AND STORAGE			
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area.		
Precautions:	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest.		
	If ingested, seek medical advice immediately and show the container or label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.		
Shelf Life:	5 yrs.		
PPE:	Wear suitable protective clothing.		
Notes:	None.		

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8. EXPOSURE CONTROLS	
PPE:	Safety glasses or splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill:	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Inhalation:	N/A
Skin:	N/A
Eye:	N/A
Ingestion:	N/A
Ventilation:	N/A
Engineering Controls:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Work/Hygienic Practices:	Wash hands after handling this product.
Exposure Limits:	N/A
Notes:	None.
9. PHYSICAL AND CHEMICAL PROPERTIES	
Color/Appearance/Odor:	Odorless white liquid with a bitter taste.
Boiling Point	N/A
Melting Point	163°C (325.4°F)-170°C
Critical Temperature:	N/A
Specific Gravity (H ₂ O=1):	N/A
Refractive Index:	N/A
Volatility:	N/A
Evaporative Rate :	N/A
Vapor Density(Air=1):	N/A
Vapor Pressure:	N/A
Odor Threshold:	N/A
Water/Oil Dist. Coeff:	The product is more soluble in oil; log (oil/water) =0.9
Iconicity (in Water):	N/A
Solubility in Water:	Partially soluble in water. Solubility in water: 45 g/l
10. STABILITY AND REACTIVITY	
Stability:	The product is stable.
Instability Temperature:	N/A
Conditions of Instability:	Excess heat, incompatible materials, dust generation.
Incompatibility with Various Substances:	Reactive with oxidizing agents.
Corrosivity:	Non-corrosive in presence of glass.
Special Remarks on Reactivity:	N/A
Special Remarks on Corrosivity:	N/A
Hazardous Polymerization:	Will not occur.
11. TOXICOLOGICAL INFORMATION	
Routes of Entry:	Inhalation. Ingestion.
Toxicity to Animals:	Acute oral toxicity (LD50): 508 mg/kg [Rabbit (Registry of Toxic Effects of Chemical Substances)]. Acute dermal toxicity (LD50): >2000 mg/kg [Rabbit].
Chronic Effects on Humans:	N/A
Other Toxic Effects on Humans:	Hazardous in case of skin contact (irritant). Slightly hazardous in case of ingestion, of inhalation.
Special Remarks on Toxicity to Animals:	LD50/Conc 50% Kill: LD50[Rat] -Route: Oral; Dose: 640 to 841 mg/kg (Information from Johnson Matthey Group)
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Notes:	N/A
12. ECOLOGICAL INFORMATION	
Ecotoxicity:	Ecotoxicity in water (LC50): >1000 mg/l 96 hours [Fish(Trout)]
BOD5 and COD:	N/A
Products of Biodegradation:	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation:	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation:	N/A

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13. DISPOSAL CONSIDERATIONS

Waste must be disposed of in accordance in Federal, State, and Local Environmental Control Regulations.

14. TRANSPORT INFORMATION

DOT Classification: Not a DOT controlled material (United States).
Proper Shipping Name: N/A
Hazard Class: N/A
Transport Emergency Card: N/A
Packing Group: N/A
UN Number: N/A
Reportable Quantity: N/A
Notes: N/A

15. REGULATORY INFORMATION

TSCA Registered: TSCA 8(b) inventory: Denatonium benzoate
California Proposition 65: California Prop 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
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Canada: Listed on Canadian Domestic Substance List (DSL)
China: Listed on National Inventory.
Japan: Listed on National Inventory. (ENCS)
Korea: Listed on National Inventory. (KECI)
Philippines: Listed on National Inventory. (PICCS)
Australia: Listed on ACIS.
FDA Approved: N/A
ICSC: N/A

16. OTHER INFORMATION

Other Special Considerations: Aversive agent and denaturant.

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