ZIRCONIUM DI-n-BUTOXIDE BIS(2,4-PENTANEDIONATE), 25% in n-butanol/toluene

Safety Data Sheet AKZ947

Date of issue: 02/22/2016 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	:	Mixture
Physical state	:	Liquid
Product name	:	ZIRCONIUM DI-n-BUTOXIDE BIS(2,4-PENTANEDIONATE), 25% in n-butanol/toluene
Product code	:	AKZ947
Formula	:	C18H32O6Zr
Synonyms	:	ZIRCONIUM ACETYLACETONATE BUTYLATE
Chemical family	:	METAL COMPOUND

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	:	Chemical intermediate For research use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number	:	CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Repr. 2	H361
STOT SE 3	H335
STOT SE 3	H336
STOT RE 2	H373
Aquatic Acute 3	H402

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS02 GHS07 GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P210 - Keep away from heat, open flames, sparks. - No smoking
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge

P260 - Do not breathe vapors
P261 - Avoid breathing vapors
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P302+P352 - If on skin: Wash with plenty of water
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
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
P337+P313 - If eye irritation persists: Get medical advice/attention
P308+P313 - If exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see first aid instructions on this label)
P362+P364 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Keep in a cool place
P405 - Store locked up
P501 - Dispose of contents/container to licensed waste disposal facility

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Toluene	(CAS No) 108-88-3	46 - 54	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
n-Butanol	(CAS No) 71-36-3	23 - 27	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
Zirconium di-n-butoxide bis(2,4-pentanedionate)	(CAS No) 62905-51-5	23 - 27	Eye Irrit. 2A, H319

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

Symptoms/injuries after inhalation : May cause drowsiness or dizziness. May cause respiratory irritation. Toluene is moderately toxic by inhalation. Human systemic effects include CNS recording changes, hallucinations, distorted perceptions.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : May be harmful if swallowed. Oral toxicity is associated with toluene which causes psychophysiological and bone marrow changes nausea, vomiting, headache, visual effects including blindness.

Chronic symptoms	:	NOTE: Material may form zirconium oxides or zirconate polymers on the skin, eyes or in the lungs. Prolonged exposure to zirconium compounds can induce formation of granulomatous lesions in the lungs or on the skin. n-butanol is metabolized to butanoic acid and 3-hydroxybutanoic acid which may result in ketosis or ketoacidosis.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Water spray. Foam. Carbon dioxide. Dry chemical.
Unsuitable extinguishing media	:	Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Highly flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
Explosion hazard	:	May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions	:	Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Eliminate every possible source of ignition. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear protective equipment as described in Section 8.
Emergency procedures	:	Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	:	Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up	:	Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Precautions for safe handling	:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent accumulation of vapors. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.
Hygiene measures	:	Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions	:	Keep container tightly closed. Keep in a cool place. Store locked up.
Incompatible materials	:	Water.
Storage area	:	Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Toluene (108-88-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m³)	375 mg/m³
USA NIOSH	NIOSH REL (TWA) (ppm)	100 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m³)	560 mg/m³
USA NIOSH	NIOSH REL (STEL) (ppm)	150 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm
USA IDLH	US IDLH (ppm)	500 ppm

n-Butanol (71-36-3)		
USA ACGIH	ACGIH TWA (ppm)	20 ppm
USA NIOSH	NIOSH REL (ceiling) (mg/m³)	150 mg/m³
USA NIOSH	NIOSH REL (ceiling) (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m³)	300 mg/m³
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm
USA IDLH	US IDLH (ppm)	1400 ppm (10% LEL)

Zirconium di-n-butoxide bis(2,4-pentanedionate) (62905-51-5)		
USA ACGIH	ACGIH TWA (mg/m³)	5 mg/m³ Zr

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

Personal protective equipment : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Neoprene or nitrile rubber gloves.

Eye protection : Chemical goggles. Contact lenses should not be worn.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Liquid.

Molecular mass : 435.66 g/mol

Color : Light amber.

Odor : Characteristic.

Odor threshold : No data available

Refractive index : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : 117 °C - initial

Flash point : 34 °C

Auto-ignition temperature : 0

Decomposition temperature : No data available

Flammability (solid, gas) : Highly flammable liquid and vapor

Vapor pressure : 4 mm Hg @ 20°C

Relative vapor density at 20 °C	:	2.6 (n-butanol)
Relative density	:	0.918
VOC content	:	> 70 °C
Solubility	:	Reacts with water.
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosion limits	:	1.4 - 11.2 vol % (lower; upper: n-butanol)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with water.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Water.

10.6. Hazardous decomposition products

Organic acid vapors. Zirconium oxide fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Toluene (108-88-3)	
LD50 oral rat	2600 mg/kg
LD50 dermal rabbit	12000 mg/kg
LC50 inhalation rat (mg/l)	12.5 mg/l/4h

n-Butanol (71-36-3)	
LD50 oral rat	700 mg/kg
LD50 dermal rabbit	3402 mg/kg
LC50 inhalation rat (ppm)	> 8000 ppm/4h
ATE US (oral)	700.000 mg/kg body weight
ATE US (dermal)	3402.000 mg/kg body weight

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified

Toluene (108-88-3)	
IARC group	3 - Not classifiable

Reproductive toxicity	:	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	:	May cause respiratory irritation. May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	:	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	:	Not classified

Potential Adverse human health effects and symptoms	:	Vapor inhalation of toluene may lead to impairment of coordination mental alertness, and reaction times, leading to accident proneness. Exposure to levels around 500ppm leads to narcotic effects including nausea, headache and mental confusion.
Symptoms/injuries after inhalation	:	May cause drowsiness or dizziness. May cause respiratory irritation. Toluene is moderately toxic by inhalation. Human systemic effects include CNS recording changes, hallucinations, distorted perceptions.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes serious eye irritation.
Symptoms/injuries after ingestion	:	May be harmful if swallowed. Oral toxicity is associated with toluene which causes psychophysiological and bone marrow changes nausea, vomiting, headache, visual effects including blindness.
Chronic symptoms	:	NOTE: Material may form zirconium oxides or zirconate polymers on the skin, eyes or in the lungs. Prolonged exposure to zirconium compounds can induce formation of granulomatous lesions in the lungs or on the skin. n-butanol is metabolized to butanoic acid and 3-hydroxybutanoic acid which may result in ketosis or ketoacidosis.
Reason for classification	:	Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life.

Toluene (108-88-3)	
LC50 fish 1	15.22 - 19.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	5.46 - 9.83 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	12.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	11.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)

n-Butanol (71-36-3)	
LC50 fish 1	1730 - 1910 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	1983 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	1740 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 2	1897 - 2072 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Toluene (108-88-3)	
Log Pow	2.65

n-Butanol (71-36-3)	
BCF fish 1	0.64
Log Pow	0.785 (at 25 °C)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 1993

DOT NA no. UN1993

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Flammable liquids, n.o.s.
(ZIRCONIUM DI-n-BUTOXIDE BIS(2,4-PENTANEDIONATE), 25% in n-butanol/toluene)

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid

DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

SECTION 15: Regulatory information

15.1. US Federal regulations

ZIRCONIUM DI-n-BUTOXIDE BIS(2,4-PENTANEDIONATE), 25% in n-butanol/toluene	
TSCA Exemption/Exclusion	CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States

Toluene (108-88-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %

n-Butanol (71-36-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule
SARA Section 313 - Emission Reporting	1.0 %

Zirconium di-n-butoxide bis(2,4-pentanedionate) (62905-51-5)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Toluene (108-88-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

n-Butanol (71-36-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

Zirconium di-n-butoxide bis(2,4-pentanedionate) (62905-51-5)

15.3. US State regulations

ZIRCONIUM DI-n-BUTOXIDE BIS(2,4-PENTANEDIONATE), 25% in n-butanol/toluene**()**	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

Toluene (108-88-3)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	Yes	Yes	No	

n-Butanol (71-36-3)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Zirconium di-n-butoxide bis(2,4-pentanedionate) (62905-51-5)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

n-Butanol (71-36-3)

SECTION 16: Other information

Abbreviations and acronyms : Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemcial Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development.

Full text of H-phrases::

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 3 Serious Hazard

Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 02/22/2016 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations