RivoChem

Material Safety Data Sheet (MSDS) Report

MSDS Number: SDS202312234727

Applicant: Zhejiang Pinghu Hualong Industrial Co., Ltd.

588 Jinsha Road, Xincang Town, Pinghu City, Zhejiang Province, 314200, China.

Sample Description:

Product Name : Valve Regulated Acid Battery

Battery type : Valve Regulated Lead-Acid Battery

Battery Model : 2-FM-4/2-FM-4.5/2-FM-5/3-FM-3/3-FM-3.5/3-FM-4/3-FM-4.5/3-FM-5/3-FM-6/3-FM-6.5/ 3-FM-7/3-FM-7.2/3-FM-10/3-FM-12/6-FM-2.3/6-FM-2.6/6-FM-4/6-FM-4.5/6-FM-5/6-FM-5.5/ 6-FM-6.5/6-FM-7/6-FM-7.2/6-FM-8/6-FM-9/6-FM-10/6-FM-12/6-FM-14/12-FM-4/12-FM-4.5/ 12-FM-5/12-FM-6/12-FM-7/12-FM-8/12-FM-9/12-FM-10/12-FM-12/12-FM-14

Data Reviewed : Jan 01, 2024

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product Name	:	Valve Regulated Acid Battery
Battery Type	:	Valve Regulated Lead-Acid Battery
Battery Model	:	2-FM-4/2-FM-4.5/2-FM-5/3-FM-3/3-FM-3.5/3-FM-4/3-FM-4.5/ 3-FM-5/3-FM-6/3-FM-6.5/ 3-FM-7/3-FM-7.2/3-FM-10/3-FM-12/ 6-FM-2.3/6-FM-2.6/6-FM-4/6-FM-4.5/6-FM-5/6-FM-5.5/6-FM-6.5/ 6-FM-7/6-FM-7.2/6-FM-8/6-FM-9/6-FM-10/6-FM-12/6-FM-14/ 12-FM-4/12-FM-4.5/12-FM-5/12-FM-6/12-FM-7/12-FM-8/12-FM-9/ 12-FM-10/12-FM-12/12-FM-14

Recommended use of the chemical and restrictions on use

Identified use	:	Use for power supply

Details of supplier of the safety data sheet
Zhejiang Pinghu Hualong Industrial Co., Ltd.
588 Jinsha Road, Xincang Town,
Pinghu City, Zhejiang Province, 314200,
China.

Emergency telephone number
Tel: +86-573-85748822,
or contact your local emergency telephone number
Product Information
Tel: +86-573-85748822
E-mail: 381514064@qq.com

SECTION 2. HAZARDS IDENTIFICATION

This is valve regulated lead-acid battery product which is considered an article as defined by 29 CFR 1910.1200 (OSHA Hazard Communication Standard). The information contained in this MSDS is supplied at the customer's request for information only.

The following information is provided for the scenario that exposure occurred during battery production or container breakage or under extreme heat conditions such as fire, however, under normal conditions of battery use, internal ingredients/components will not present any physical, health and environmental hazard.

The following GHS hazardous classification are derived based on the internal ingredients under extreme exposure scenarios, such as breakage, leakage or being abused.

GHS Classification(29 CFR 1910.1200 (OSHA HazCom 2012))

Corrosive to Metals	:	Category 1
Skin corrosion	:	Category 1
Serious eye damage	:	Category 1
Reproductive toxicity	:	Category 1A
Specific target organ systemic toxicity - repeated exposure (Oral)	:	Category 1 (Central nervous system, Kidney, Blood)
Specific target organ	:	Category 1 (Central nervous system, Kidney, Blood)

systemic toxicity - repeated exposure (Inhalation)

GHS Label element(29 CFR 1910.1200 (OSHA HazCom 2012))

Hazard pictograms :

Signal Word : Danger

Hazard Statements : May be corrosive to metals.
Causes severe skin burns and eye damage.
Causes serious eye damage.
May damage fertility or the unborn child.
Causes damage to organs (Central nervous system, Kidney, Blood) through prolonged or repeated exposure if swallowed.
Causes damage to organs (Central nervous system, Kidney, Blood) through prolonged or repeated exposure if inhaled.

Precautionary Statements :

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep only in original container.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
IF exposed or concerned: Get medical advice/ attention.
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage:
Store locked up.
Store in corrosive resistant stainless steel container with a resistant inner liner.

Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No further available information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Product form : Manufactured article/solid

Hazardous components

Chemical Name	CAS-No.	Classification (OSHA HazCom 2012))	Concentration/ weight (wt%)
LEAD	7439-92-1	Repr. 1A; H360 STOT RE 1; H372 STOT RE 1; H372	65%
SULFURIC ACID	7664-93-9	Met. Corr. 1; H290 Skin Corr. 1; H314 Eye Dam. 1; H318	25%
FIBERGLASS	65997-17-3	Non-hazardous/ not classified	3%
ABS RESIN	9003-56-9	Non-hazardous/ not classified	7%

SECTION 4. FIRST AID MEASURES

Under normal conditions of battery use, internal ingredients/components will not present a health hazard. The following information is provided for battery electrolyte (acid) and lead for exposures that may occur during battery production or container breakage or under extreme heat conditions such as fire.

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If symptoms persist, call a physician.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.

If swallowed : Get medical attention immediately.

		Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways) Cough/choking.lung edema (fluid buildup in the lung tissue) Difficulty in breathing Causes serious eye damage. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure if swallowed. Causes damage to organs through prolonged or repeated exposure if inhaled. Causes severe burns.
Notes to physician	:	No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Foam/Carbon dioxide (CO2)/Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries.
Hazardous combustion products	:	Toxic fumes, corrosive vapors and sulfur oxides
Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials.

		If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc.
Other information	:	Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Do not drop battery, puncture, or attempt to open battery case. Avoid contact with the internal components of a battery. Do not subject product to open flame or fire and avoid situations that could cause arcing between terminals. Do not smoke. Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
Conditions for safe storage	:	Store batteries under roof in cool, dry, well-ventilated areas separated from incompatible materials and from activities that may create flames, spark, or heat. Store sealed lead acid batteries at ambient temperature. Observe label precautions.
Charging:	:	Shut-off power to chargers whenever not in use and before detachment of any circuit connections Batteries being charged may generate and release flammable hydrogen gas.. Charging space should be ventilated. There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged.
Other	:	Follow Manufacturers Recommendations regarding maximum recommended currents and operating temperature range. Do not overcharge beyond the recommended upper charging voltage limit. Applying pressure or deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Airborne exposures to hazardous substances are not expected when the cells or batteries are used for their intended purposes.

Exposure standards are not applicable to the sealed articles.

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
LEAD	7439-92-1	TWA	0.05 mg/m3 (as Pb)	PY OEL
LEAD	7439-92-1	TWA	0.05 mg/m3 (as Pb)	ACGIH
LEAD	7439-92-1	REL	0.050 mg/m3 (as Pb)	NIOSH/GUIDE
LEAD	7439-92-1	TWA	0.05 mg/m3	OSHASP
LEAD	7439-92-1	OSHA_ACT	0.03 mg/m3	OSHASP
SULFURIC ACID	7664-93-9	TWA	0.2 mg/m3 Thoracic fraction.	ACGIH
SULFURIC ACID	7664-93-9	REL	1 mg/m3	NIOSH/GUIDE
SULFURIC ACID	7664-93-9	PEL	1 mg/m3	OSHA_TRANS
SULFURIC ACID	7664-93-9	TWA	1 mg/m3	TN OEL

Engineering measures : Store sealed lead acid batteries at ambient temperature.
Never recharge batteries in an unventilated, enclosed space.
Do not subject product to open flame or fire.
Avoid conditions that could cause arcing between terminals.

Personal protective equipment

Respiratory protection : None required for normal handling of products.
Hand protection : None required for normal handling of products.
Eye protection : None required for normal handling of products.
Skin and body protection : None required for normal handling of products.
Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Manufactured article

Colour : Various

Odor : No odor/odorless(product)/Sharp, penetrating, pungent odor(electrolyte)

Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	327.4° C(lead) /-35 to -60° C (electrolyte)
Boiling point/boiling range	:	1740° C (lead)/Approx. 108~114° C (electrolyte)
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Non-flammable under normal use conditions
Upper explosion limit	:	Non-explosive
Lower explosion limit	:	Non-explosive
Vapour pressure	:	<0.3mmHg @25° C (electrolyte)
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	11.35 g/cm³(lead)/1.2 to 1.3 g/cm³(electrolyte)
Water solubility	:	0.15mg/l (lead)/Fully soluble(Electrolyte)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Thermal decomposition	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	Not an oxidizer

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions. The sealed battery is considered stable.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Incompatible materials	:	Contact with combustibles and organic materials may cause fire and explosion.

		Reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas. Acids/Bases/Combustible material/Organic materials Strong oxidizing agents/strong reducing agents
Hazardous decomposition products	:	Electrolyte: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide. Sulphur oxides/toxic fumes/ corrosive vapors

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Under normal conditions of use, this product does not present a health hazard. The following information is provided for organic electrolyte and lead exposure that may occur due to container breakage or under extreme conditions such as fire.

Acute toxicity
Not classified based on available information.
LEAD**:**
Acute oral toxicity : LD L0 (Human): 155 mg/kg

Acute inhalation toxicity : LC Lo (Human): 271 mg/m3

SULFURIC ACID**:**
Acute oral toxicity : LD 50 (Rat): 2,140 mg/kg

Skin corrosion/irritation
Causes severe burns.

Remarks: Causes severe skin burns and eye damage.

LEAD**:**
Result: Not irritating to skin

SULFURIC ACID**:**
Result: Corrosive to skin

Serious eye damage/eye irritation
Causes serious eye damage.

Remarks: May cause irreversible eye damage.

LEAD**:**
Result: Slightly irritating to eyes

SULFURIC ACID**:**
Result: Corrosive to eyes

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.
Carcinogenicity
Not classified based on available information.
Reproductive toxicity
May damage fertility or the unborn child.
LEAD**:**

Reproductive toxicity - Assessment	:	Positive evidence of adverse effects on sexual function and fertility from human epidemiological studies. Positive evidence of adverse effects on development from human epidemiological studies.

STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Causes damage to organs (Central nervous system, Kidney, Blood) through prolonged or repeated exposure if swallowed.
Causes damage to organs (Central nervous system, Kidney, Blood) through prolonged or repeated exposure if inhaled.
LEAD**:**
Exposure routes: Ingestion
Target Organs: Central nervous system, Kidney, Blood
Assessment: Causes damage to organs through prolonged or repeated exposure.

Exposure routes: Inhalation
Target Organs: Central nervous system, Kidney, Blood
Assessment: Causes damage to organs through prolonged or repeated exposure.

Aspiration toxicity
Not classified based on available information.
Further information
LEAD**:**
Remarks: Reproductive system Kidney/Central nervous system/Blood

SULFURIC ACID**:**
Remarks: Lung

Carcinogenicity:

IARC	Group 1: Carcinogenic to humans	
	SULFURIC ACID	7664-93-9
	Group 2B: Possibly carcinogenic to humans	
	LEAD	7439-92-1
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.	
NTP	Known to be human carcinogen	

SULFURIC ACID	7664-93-9

Reasonably anticipated to be a human carcinogen

LEAD	7439-92-1

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

LEAD**:**

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish : mortality LOEC - Oncorhynchus mykiss (rainbow trout) - 1,19 mg/l -
96,0 h
LC50 - Micropterus dolomieui - 2,2 mg/l - 96,0 h
mortality NOEC - Salvelinus fontinalis - 1,7 mg/l - 10,0 d

Toxicity to daphnia and other aquatic invertebrates : mortality LOEC - Daphnia (water flea) - 0,17 mg/l - 24 h
mortality NOEC - Daphnia (water flea) - 0,099 mg/l - 24 h

Toxicity to algae : mortality EC50 - Skeletonema costatum - 7,94 mg/l - 10 d

SULFURIC ACID**:**

Toxicity to fish : LC 50 (Lepomis macrochirus (Bluegill sunfish)): > 28 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

LC 50 (Lepomis macrochirus (Bluegill sunfish)): 16 - 28 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: Static

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h

Persistence and degradability

Bioaccumulation : Oncorhynchus kisutch - 2 Weeks
- 150 µg/l(Lead)

Bioconcentration factor (BCF): 12

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : Lead-acid batteries are completely recyclable.
Material should be recycled if possible.
Dispose of in accordance with all applicable local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

GROUND TRANSPORT/US DOT, 49 CFR

UN Number: UN2800
Proper Shipping Name: BATTERIES, WET, NONSPILLABLE,electric storage
Hazard classes: 8
Packaging group: Not applicable

SEA TRANSPORT/INTERNATIONAL MARITIME DANGEROUS GOODS(IMDG 2022 EDITION AMENDMENT, 41-22)

UN Number: UN2800
Proper Shipping Name: BATTERIES, WET, NONSPILLABLE,electric storage
Hazard classes: 8
Packaging group: Not applicable
Special provision: 29, 238
LQ: 1L
EQ: E0
EmS No.: F-A,S-B
Marine pollutant: No

AIR TRANSPORT/2023–2024 EDITION OF THE ICAO TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR(ICAO TI, 2023–2024) AND 65TH EDITION of the IATA DANGEROUS GOODS REGULATION (IATA DGR, 65TH EDITION)
UN Number: UN2800
Proper Shipping Name: BATTERIES, WET, NONSPILLABLE,electric storage
Hazard classes: 8
Packaging group: Not applicable
EQ: E0
Packing code(passenger): 872
Packing code(cargo): 872
Special provision: A48、A67、A164、A183
ERG code: 8L

This battery is not subject to DG regulations and is not a dangerous goods.

GROUND TRANSPORT/US DOT, 49 CFR
This valve regulated lead-acid battery is non-spillable battery and meet the requirements of 49 CFR 173.159(d), so it's not subject to DG regulations. It doesn't have an assigned UN number nor does it require additional DOT hazard labeling.

SEA TRANSPORT/INTERNATIONAL MARITIME DANGEROUS GOODS(IMDG 2022 EDITION AMENDMENT, 41-22)
This valve regulated lead-acid battery is non-spillable battery and meet the requirements of special provision 238, so it is not subject to the provision of IMDG code.

AIR TRANSPORT/2023–2024 EDITION OF THE ICAO TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR(ICAO TI, 2023–2024) AND 65TH EDITION of the IATA DANGEROUS GOODS REGULATION (IATA DGR, 65TH EDITION):

This valve regulated lead-acid battery is exempt from DG regulation and classified as “non-spillable battery”, so this battery is not subject to DG regulations, since it meets the requirement of packing instructions 872 of special provision A67.
This valve regulated lead-acid battery is securely packaged, protected from short circuits and labeled “non-spillable”, they are good for transportation on either passenger or cargo aircraft.

SECTION 15. REGULATORY INFORMATION

This product is an article pursuant to 29 CFR 1910.1200 and as such is not subjected to the OSHA Hazard Communication Standard. The information on this SDS is supplied at customer’s request for information only.

SARA 302 : Not regulated.

SARA 311/312 Hazards : Not regulated.

SARA 313 Component(s) : Not regulated.

California Prop 65 : This product does not contain any chemical known to the State of California to cause cancer.

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 01/01/2024

Disclaimer:
This MSDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by us to be dependable and is accurate to the best of our knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. We assumed no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :
ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).
ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods

logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration

*****End of report*****