

**Triisobutylaluminum Line Flush**

Version 1.1

Revision Date 2013-07-09

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

Trade name : Triisobutylaluminum Line Flush

Company : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380**Emergency telephone:****Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

North America: CHEMTREC 800.424.9300 or 703.527.3887

Asia: +800 CHEMCALL (+800 2436 2255)

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group

E-mail address : MSDS@CPChem.com

Website : www.CPChem.com

SECTION 2: Hazards identification**Emergency Overview****Form:** Liquid **Physical state:** Liquid **Color:** light yellow, dark, opaque **Odor:** very faint


OSHA Hazards : Flammable Liquid, Harmful by skin absorption., Reproductive hazard

GHS Classification: Flammable liquids, Category 2
Skin irritation, Category 2
Reproductive toxicity, Category 2
Specific target organ systemic toxicity - single exposure,
Category 3, Respiratory system, Central nervous system
Specific target organ systemic toxicity - repeated exposure,
Category 2, Nervous system
Aspiration hazard, Category 1
Acute aquatic toxicity, Category 3
Chronic aquatic toxicity, Category 3**GHS-Labeling**

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

| | | |
|--------------------------|---|---|
| Symbol(s) | : |  |
| Signal Word | : | Danger |
| Hazard Statements | : | <p>H225: Highly flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin 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 (Nervous system) through prolonged or repeated exposure. H412: Harmful to aquatic life with long lasting effects.</p> |
| Precautionary Statements | : | <p>Prevention: P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe dust/fume/gas/mist/vapor/spray. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>Response: P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. P302 + P334: IF ON SKIN: Immerse in cool water/ wrap in wet bandages. P303 + P361 + P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P321: Specific treatment (see supplemental first aid instructions on this label). P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362: Take off contaminated clothing and wash before reuse. P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.</p> <p>Storage: P403 + P233: Store in a well-ventilated place. Keep container tightly closed. P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. P422: Store contents under inert gas.</p> <p>Disposal:</p> |

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

P501: Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3: Composition/information on ingredients

| Component | CAS-No. | Weight % |
|----------------------|-----------|------------|
| White Mineral Oil | 8042-47-5 | 80 - 97 |
| Hexane | 110-54-3 | 3 - 20 |
| Triisobutyl aluminum | 100-99-2 | 0.01 - 0.2 |

SECTION 4: First aid measures

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
- If inhaled : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.
- In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

- Flash point : -26 °C (-15 °F)
minimum
100 °C (212 °F)
- Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- 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 for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames,

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****US**

| Ingredients | Basis | Value | Control parameters | Note |
|-------------------|------------|-------|----------------------------------|------------|
| White Mineral Oil | OSHA Z-1 | TWA | 5 mg/m ³ | |
| | OSHA Z-1-A | TWA | 5 mg/m ³ | |
| Hexane | ACGIH | TWA | 50 ppm, | BEI, Skin, |
| | OSHA Z-1 | TWA | 500 ppm, 1,800 mg/m ³ | (b), |
| | OSHA Z-1-A | TWA | 50 ppm, 180 mg/m ³ | |

(b) The value in mg/m³ is approximate.
 BEI Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
 Skin Danger of cutaneous absorption

Immediately Dangerous to Life or Health Concentrations (IDLH)

| Substance name | CAS-No. | Control parameters | Update |
|-------------------|-----------|--|------------|
| White Mineral Oil | 8042-47-5 | Immediately Dangerous to Life or Health Concentration Value 2500 milligram per cubic meter | 1995-03-01 |
| Hexane | 110-54-3 | Immediately Dangerous to Life or Health Concentration Value 1100 parts per million | 1995-03-01 |

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Form : Liquid
- Physical state : Liquid
- Color : light yellow, dark, opaque
- Odor : very faint

Safety data

- Flash point : -26 °C (-15 °F)
minimum
- Lower explosion limit : No data available
100 °C (212 °F)
- Upper explosion limit : No data available
- Molecular Weight : Not applicable
- pH : Not applicable
- Freezing point : No data available
- Melting point/range : No data available
- Boiling point/boiling range : No data available
- Vapor pressure : No data available
- Density : No data available
- Water solubility : Insoluble
- Solubility in other solvents : Soluble in hydrocarbon and non-polar organic solvents

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

SECTION 10: Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Conditions to avoid : Heat, flames and sparks.

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Acute inhalation toxicity**

Hexane : LC50: 73680 ppm
Exposure time: 4 h
Species: rat
Sex: male

Triisobutylaluminum Line Flush

Acute dermal toxicity : : > 5,000 mg/kg

Triisobutylaluminum Line Flush

Skin irritation : May cause skin irritation in susceptible persons.

Triisobutylaluminum Line Flush

Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.

Triisobutylaluminum Line Flush

Sensitization : No adverse effects expected.

Repeated dose toxicity

Hexane : Species: rat, male
Sex: male
Application Route: Inhalation
Dose: 3,000 ppm
Exposure time: 16 wks
Number of exposures: 12 h/d
Lowest observable effect level: 3,000 ppm
Target Organs: Peripheral nervous system

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

Species: mouse, female
 Sex: female
 Application Route: Inhalation
 Dose: 500, 1,000, 4,000, 10,000 ppm
 Exposure time: 13 wks
 Number of exposures: 6h or 22h (1,000 ppm)/ 5d/wk
 Lowest observable effect level: 500 ppm
 Target Organs: Nose

Species: mouse, male
 Sex: male
 Application Route: Inhalation
 Dose: 500, 1,000, 4000, 10,000 ppm
 Exposure time: 13 wks
 Number of exposures: 6h or 22h (1,000 ppm)/d, 5d/wk
 NOEL: 500 ppm
 Lowest observable effect level: 1,000 ppm
 Target Organs: Nose

Species: rat, male
 Sex: male
 Application Route: oral gavage
 Dose: 568, 1,135, 3,973 mg/kg bw/day
 Exposure time: 90 or 120 days
 Number of exposures: Daily or 5d/wk (120-d study)
 NOEL: 568 mg/kg bw/day
 Lowest observable effect level: 1135 mg/kg bw/day

Triisobutylaluminum Line Flush

Carcinogenicity : Remarks: Not expected to be carcinogenic based on individual component data.

Reproductive toxicity

Hexane : Species: rat
 Sex: male
 Application Route: Inhalation
 Dose: 5,000 ppm
 Number of exposures: 16 hr/d, 6 d/wk
 Test period: 6 wks
 permanent testicular damage characterized by loss of germ-cell line

Teratogenicity

Hexane : Species: rat
 Application Route: Inhalation
 Dose: 200, 1,000, 5,000 ppm
 Number of exposures: 20 hr/d, daily
 Test period: GD 6-20
 NOAEL Teratogenicity: 200 ppm
 NOAEL Maternal: 200 ppm

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

Species: mouse
 Application Route: Inhalation
 Dose: 200, 1,000, 5,000 ppm
 Number of exposures: 20 hr/d, daily
 Test period: GD 6-17
 NOAEL Maternal: 1,000 ppm

Aspiration toxicity

White Mineral Oil : May be fatal if swallowed and enters airways.
 Hexane : May be harmful if swallowed and enters airways.

CMR effects

Hexane : Carcinogenicity: Not classifiable as a human carcinogen.
 Mutagenicity: Did not show mutagenic effects in animal experiments.
 Teratogenicity: Suspected of damaging the unborn child.
 Reproductive toxicity: Suspected of damaging fertility.

Triisobutylaluminum Line Flush

Further information : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

SECTION 12: Ecological information**Toxicity to fish**

Hexane : LL50: 12.51 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates

Hexane : EL50: 21.85 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Method: QSAR modeled data

Toxicity to algae

Hexane : EL50: 9.29 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (green algae)
 Method: QSAR modeled data

Bioaccumulation

Hexane : Bioconcentration factor (BCF): 501
 Does not significantly accumulate in organisms.

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

Biodegradability

Hexane : This material is expected to be readily biodegradable.

Results of PBT assessment

Hexane : Non-classified vPvB substance, Non-classified PBT substance

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.**SECTION 13: Disposal considerations**

The information in this MSDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN3394, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, (TRIIISOBUTYL ALUMINUM, HEXANE), 4.2 (4.3), I, RQ (HEXANE)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3394, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, (TRIIISOBUTYL ALUMINUM, HEXANE), 4.2 (4.3), I, (-26 °C), (100 °C), MARINE POLLUTANT, (HEXANE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

UN3394, 4.2: NOT PERMITTED FOR TRANSPORT

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN3394, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, (TRIIISOBUTYL ALUMINUM, HEXANE), 4.2 (4.3), I, (B/E), ENVIRONMENTALLY HAZARDOUS, (HEXANE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN3394, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, (TRIIISOBUTYL ALUMINUM, HEXANE), 4.2 (4.3), I, ENVIRONMENTALLY HAZARDOUS, (HEXANE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN3394, ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, (TRIIISOBUTYL ALUMINUM, HEXANE), 4.2 (4.3), I, ENVIRONMENTALLY HAZARDOUS, (HEXANE)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation**

| | |
|--------------------------------------|---|
| SARA 311/312 Hazards | : Fire Hazard Acute Health Hazard Chronic Health Hazard |
| CERCLA Reportable Quantity | : Calculated RQ exceeds reasonably attainable upper limit. Hexane |
| SARA 302 Reportable Quantity | : This material does not contain any components with a SARA 302 RQ. |
| SARA 302 Threshold Planning Quantity | : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 304 Reportable Quantity | : This material does not contain any components with a section 304 EHS RQ. |

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

SARA 313 Ingredients : The following components are subject to reporting levels established by SARA Title III, Section 313:
 : Hexane - 110-54-3

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):
 : Hexane - 110-54-3

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : White Mineral Oil - 8042-47-5
 Hexane - 110-54-3

New Jersey Right To Know : White Mineral Oil - 8042-47-5
 Hexane - 110-54-3

California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH : Not in compliance with the inventory
 United States of America US.TSCA : On TSCA Inventory
 Canada DSL : All components of this product are on the Canadian DSL.
 Australia AICS : On the inventory, or in compliance with the inventory
 New Zealand NZIoC : On the inventory, or in compliance with the inventory
 Japan ENCS : On the inventory, or in compliance with the inventory
 Korea KECI : On the inventory, or in compliance with the inventory
 Philippines PICCS : On the inventory, or in compliance with the inventory
 China IECSC : On the inventory, or in compliance with the inventory

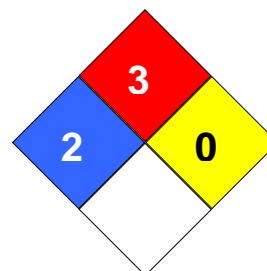
Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0

**Further information**

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this MSDS pertains only to the product as shipped.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

| | | | |
|--------|--|-------|---|
| ACGIH | American Conference of Government Industrial Hygienists | LD50 | Lethal Dose 50% |
| AICS | Australia, Inventory of Chemical Substances | LOAEL | Lowest Observed Adverse Effect Level |
| DSL | Canada, Domestic Substances List | NFPA | National Fire Protection Agency |
| NDSL | Canada, Non-Domestic Substances List | NIOSH | National Institute for Occupational Safety & Health |
| CNS | Central Nervous System | NTP | National Toxicology Program |
| CAS | Chemical Abstract Service | NZIoC | New Zealand Inventory of Chemicals |
| EC50 | Effective Concentration | NOAEL | No Observable Adverse Effect Level |
| EC50 | Effective Concentration 50% | NOEC | No Observed Effect Concentration |
| EGEST | EOSCA Generic Exposure Scenario Tool | OSHA | Occupational Safety & Health Administration |
| EOSCA | European Oilfield Specialty Chemicals Association | PEL | Permissible Exposure Limit |
| EINECS | European Inventory of Existing Chemical Substances | PICCS | Philippines Inventory of Commercial Chemical Substances |
| MAK | Germany Maximum Concentration Values | PRNT | Presumed Not Toxic |
| GHS | Globally Harmonized System | RCRA | Resource Conservation Recovery Act |
| >= | Greater Than or Equal To | STEL | Short-term Exposure Limit |
| IC50 | Inhibition Concentration 50% | SARA | Superfund Amendments and Reauthorization Act. |
| IARC | International Agency for Research on Cancer | TLV | Threshold Limit Value |
| IECSC | Inventory of Existing Chemical Substances in China | TWA | Time Weighted Average |
| ENCS | Japan, Inventory of Existing and New Chemical Substances | TSCA | Toxic Substance Control Act |

Triisobutylaluminum Line Flush

Version 1.1

Revision Date 2013-07-09

| | | | |
|------|------------------------------------|-------|--|
| KECI | Korea, Existing Chemical Inventory | UVCB | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | | |