1.0 **SAFETY REQUIREMENTS**

1.1 The entire performance of the Work shall comply with the standards authorized by the latest issue of the U.S. Department of Labor Occupational Safety and Health Act (OSHA), as well as state and local jurisdictional requirements.

A. This Safety and Health Plan (SAP) addresses the requirements of 35 Ill. Adm. Code 845.530 regarding the operation of Midwest Generation's coal combustion residuals (CCR) surface impoundments.

B. Midwest Generation complies with all applicable OSHA regulations as part of operating their generating stations. Health and Safety plans currently exist for the operation of the generating stations and will be complied with, as necessary, for work not associated with the CCR surface impoundments.

1.2 CONTRACTORS SAFETY MANUAL

A. The Contractor shall have on file with the Midwest Generation corporate safety office a copy of the most current Safety and Industrial Hygiene Manual. As a minimum, this Manual must address the following items when applicable to their trade: OSHA Compliance, Accident Investigation, Corrective Action, First Aid Treatment, Inspections and Reporting of Deficiencies, Material Handling and Rigging, Performance and Accountability, Personal Safety Equipment, Safety Guidelines, Safety Meetings, Training, Housekeeping, Hearing Protection, Respiratory Protection, Fire Prevention, Grounding Program, Confined Space Entry, Hazard Communication, Fall Protection, Working on or near water and Trenching and Shoring.

B. The Contractor's superintendent or other responsible person must have a copy of the Contractor's most current Safety and Industrial Hygiene Manual available at the job site.

1.3 PRE-MOBILIZATION MEETING

A. The Contractor shall meet with the Purchasers Representative(s) for a pre-mobilization meeting. The pre-mobilization meeting will include a review of safety requirements, job hazard identification, a job specific safety plan (to be developed by the Contractor and provided to Midwest Generation), submittal requirements for health & safety records, and scope and schedule. Hazard identification and assessment will include all chemical constituents found present in the analyses of the CCR and/or other waste streams within the impoundment(s). Recommendations within the NIOSH Pocket Guide to Chemical Hazards will be reviewed and considered. Applicable safety data sheets will be provided, as necessary.

B. Prior to the start of the work at the job site, Contractor shall contact Purchaser's Representative to arrange to receive Purchasers site safety orientation. This session will last approximately 2 hours. The Contractor will be provided with information on the potential hazardous constituents of the CCR.

C. The Contractor is required to receive the Purchasers site safety orientation on an annual basis.

D. Contractor shall provide his employees with orientation in all Contractor, and job specific safety requirements related to their work area. Contractor shall provide Purchaser with completed training documents showing date of training and each employees craft related training as it relates to OSHA requirements. (i.e. competent person, scaffold builder, fork truck and crane operators)

E. The Contractor Shall provide proof of training for all on site personnel in the following:
   - HAZWOPER 29 CFR 1910.120/29 CFR 1926.65
   - OSHA 10 Hour or 30 Hour Voluntary Compliance Training for Construction
   - Hazard Communication 29 CFR 1910.1200
   - Contractor's Safety Plan

F. A Competent Person shall be identified by name for Excavations, Fall Protection, etc. if applicable.

1.4 FITNESS FOR DUTY

A. The Contractor/Sub-Contractor/Supplier is required to have a drug and alcohol screening program for all employees assigned to work on Purchaser's property. The program must provide screening for pre-access testing, "for cause" testing and random testing. The Contractor/Sub-Contractor/Supplier shall certify that their employees have passed the appropriate screening test in accordance with their programs.

B. Personnel covered by this program shall be denied access to, or may be required to leave the Purchaser's location if there are reasonable grounds to believe that the individual is:
   1. Under the influence of using, possessing, buying, selling, or otherwise exchanging (whether or not for profit) controlled substances or drug paraphernalia.
   2. Under the influence of consuming, possessing, buying, selling, or otherwise exchanging (whether or not for profit) alcoholic beverages.

1.5 PERSONNEL PROTECTIVE EQUIPMENT (PPE)

A. Prior to starting work, the contractor shall perform a Hazard assessment for PPE
   1. The Contractor will conduct a walk-through survey of each work area to identify sources of work hazards. Each survey will be documented in which it will identify the work area surveyed, the relevant task, the person conducting the survey, findings of potential hazards, control measures, and date of the survey.
   2. The Contractor will conduct, review, and update the hazard assessment for PPE whenever:
      - The scope of work changes
      - New equipment or process is installed
      - There has been an accident
      - Whenever a supervisor or employee requests it

- Or at least every year
- Any new PPE requirements that are developed will be added into the Contractors written safety program.

B. Head Protection/Hard Hats: Hard hats shall be worn in all work areas.
   1. Hard hats must not be more than 5 years old, and the harness shall not be more than 1 year old.
   2. Hard hats must be worn with brim forward
   3. Hard hats must be assigned and used in accordance with ANSI/ISEA Z89.1-2014(R2019)
   4. Hard Hats must be cleaned and maintained in accordance with the manufacturer's instruction.

C. Eye Protection: Eye protection shall be worn in all work areas.
   1. At a minimum, ANSI Z87-1-2020 compliant Safety Glasses shall be worn.
   2. Goggles and face shields shall be used for splash hazards.
   3. Fogging potential shall be considered for humid conditions and appropriate anti-fog materials may be used.
   4. Detachable side protectors (e.g. clip-on or slide on side shields) that meet OSHA Rule 29 CFR Part 1910.133 and ANSI Z87.1 specifications are also acceptable to wear with prescription glasses. Prescription glasses used with detachable side shields must conform to ANSI Z87.1
   5. Employees must keep eyewear in clean condition and fit for use at all times.

D. Protection Foot Wear
   1. All foot wear must be compliant with ASTM F2413-18: Performance Requirements For Protective (Safety) Toe Cap Footwear
   2. For work on or near the CCR impoundments, consideration shall be given to traction and slip issues.
   3. Safety shoes must be maintained and cleaned in accordance with the manufacturer's guidelines.
   4. Boot covers or Rubber boots shall be used in all areas that do or may contain CCR. These covers or boots must be cleaned or disposed of prior to leaving the work area.

E. Hand Protection
   1. Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.
   2. Impervious disposable gloves shall be used when working with CCR. Leather, Cotton or other readily absorbable gloves shall not be used.

F. Personal Flotation Devices
   1. When working with 10 feet of the water in the impoundments the following shall apply:
      a. All personnel shall wear a Coast Guard Approved PFD

- Type I: Off-Shore Life Jacket; effective for all waters or where rescue may be delayed.
- Type II: Near-Shore Buoyant Vest; intended for calm, inland water or where there is a good chance of quick rescue.
- Type III: Flotation aid; good for calm, inland water, or where there is a good chance of rescue.
- Type IV: PFD's are throwable devices. They are used to aid persons who have fallen into the water.
- Type V: Flotation aids such as boardsailing vests, deck suits, work vests, and inflatable PFD's marked for commercial use.

2. Serviceable condition: A PFD is considered to be in serviceable condition only if the following conditions are met.
   a. No PFD may exhibit deterioration that could diminish the performance of the PFD, including:

      1. Metal or plastic hardware used to secure the PFD on the wearer that is broken, deformed, or weakened by corrosion;

      2. Webbings or straps used to secure the PFD on the wearer that are ripped, torn, or which have become separated from an attachment point on the PFD; or

      3. Any other rotted or deteriorated structural component that fails when tugged;

      4. Rips, tears, or open seams in fabric or coatings, that are large enough to allow the loss of buoyant material;

      5. Buoyant material that has become hardened, non-resilient, permanently compressed, waterlogged, oil-soaked, or which shows evidence of fungus or mildew; or

      6. Loss of buoyant material or buoyant material that is not securely held in position.

1.6 EXISTING PLANT FACILITIES

A. Contractor shall be aware that Work may be performed in and around operating equipment.

B. The Contractor shall give proper notices, make all necessary arrangements, and perform all other services required to avoid damage to all utilities, including gas mains, water pipes, sewer pipes, electric cables, fire hydrants, lamp posts, etc., for which Purchaser could be held liable.

C. The Contractor shall barricade or cover any opening created during the course of work for excavations, or grating removal. Barricades shall be a "hard" barrier such as cable or pipe and clamp, safety barrier tape is unacceptable. In addition, any openings creating a fall hazard of 4 feet or more must have a permit authorized before the barrier can be removed. See section 11.4 below for permit requirements.

D. Housekeeping, walkways and tripping hazards: All equipment and material must be kept in an orderly manner. Aisles exits stairways and emergency equipment must never be obstructed. Hoses and welding cables must be tied above walkways so as to not pose as a trip hazard. Barricades, signs and notifications provided by the contractor when required. The owner and contractor will conduct periodic housekeeping audits to assure compliance.

E. Contractor's personnel shall observe all safety, warning, equipment identification instructional signs and tags. Do not remove any tag without prior consent of Purchaser's Representative.

F. When work has been completed, and Contractor decides equipment is ready to be returned to service, Contractor employees shall have all of their employees (working party members) sign off the permit. Contractor shall notify Purchaser's Representative in whose name the outage is being held.

1.7 WELDING, CUTTING and BURNING PERMITS

A. Contractor shall not start welding or cutting operations without a "Welding and Cutting Permit". Permits shall be obtained from Purchaser and posted in accordance with Station site-specific Safety Training requirements.

B. Contractor shall use non-asbestos, fire retardant blankets as required to protect Purchaser's equipment, cable trays, coal transport and storage areas, etc. and to cover gratings (for personnel safety) when welding, grinding and flame cutting processes are used overhead or in such close proximity as to pose a hazard.

C. Contractor shall supply appropriate portable fire extinguishers in welding and cutting areas.

D. Contractor shall furnish a designated “Fire-watch” employee to monitor the area above to the sides and below the cutting and burning area. The fire-watch is to extinguish fires started by sparks from the acts of cutting or welding. The fire-watch employee is to continue monitoring on the job 30 minutes after cutting or burning has been completed.

1.8 SAFETY DATA SHEETS

A. The Purchaser shall make Safety Data Sheets (SDS's) readily available to the Contractor for those substances to which the Contractor’s employees may be exposed during normal working conditions and which are under the Purchaser’s control.

B. The Contractor shall make Safety Data Sheets (SDS's) readily available to the Purchaser for those substances which are furnished by and under the control of the Contractor. These are to be available at the time of delivery of the substance to the Purchaser’s Premises.

C. It is the responsibility of the Contractor to train their employees on SDS's.

A. Midwest Generation uses an electronic SDS management system that is accessible by employees of the station as needed. The relevant SDS's for the CCR surface impoundments are included in Attachment 1. Additional SDS's can be accessed, as needed, through the electronic management system.

1.9 CHEMICALS, SOLVENTS AND GASES

A. Contractor shall comply with all federal, state and local regulations and codes pertaining to handling and storage of flammable liquids and gases.

B. Cleaning agents, solvents, or other substances brought by Contractor onto any of Purchaser's properties by Contractor shall be stored, handled and used in accordance with applicable standards.

C. Contractor shall ensure that liquids or solids will not be poured (disposed of) into Purchaser's drain, sewer systems, lake (where applicable), or onto ground. Contractor shall be liable for any damage and cleanup of improperly disposed liquids or solids.

D. The Contractor is to provide the Purchaser with the name and quantity of usage of any listed Section 313 Toxic Chemical of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

E. Signage must be posted detailing the presence of and hazards of CCR.

1.10 DISTURBANCE OF DUST

Contractor's work practices shall minimize dust generated while working with CCR. A fugitive dust mitigation plan shall be submitted to the facility prior to activities beginning.

1.11 FALL PROTECTION

Mandatory fall protection is required when working near and area where a fall hazard of **4** feet or more exits.

1.12 BARRIERS AND WARNING SYSTEMS

A. Warning and barricade systems shall be used to divert personnel from a work area. All warning barriers shall be tagged with yellow "Caution Cards". The caution card shall state the hazard, the date erected and a contact name, company and phone number. There are 2 levels of barricade systems. The barricade systems shall be taken down immediately when the hazard has been removed or at the end of the work shift.

B. A conditional warning is designated with 'Yellow" safety warning tape. This is used to warn workers of a hazard such as wet floors, welding and cutting in an area, or other hazards that with an awareness and proper PPE can be approached.

C. An Unconditional warning is designated with “Red” safety warning tape. This is used to worn workers of a hazard such as a crane lift or overhead work. Red safety tape barriers cannot be access or removed until permission is granted from the person responsible for installing it.

D. Fire and Evacuation warning sirens. Each plant has a siren for fire notification and evacuation notification. The response location and procedure will be addressed in the pre-mobilization meeting and plant site-specific orientation. The station’s Emergency Warning system is an electronic siren-toned system. The designated siren-tone alarms and the related emergency conditions are listed below:

1) **FIRE**: HI-LO siren-tone for approx. 60 seconds (Fires, explosions, releases, etc.)
2) **Evacuation**: Steady siren-tone for approx. 60 seconds
3) **Natural Disaster**: (Tornado, Etc.) WAIL (SLOW) siren-tone for approx. 60 seconds

E. A CCR health hazard sign is posted at the CCR Basins. The sign lists health hazard statements, PPE requirements, and precautionary measures.

1.13 For Contractor's and subcontractor's employees, visitors and any other individuals: Smoking is prohibited on the work site.

1.14 The Contractor is expected to pre-arrange medical emergency services for on-site and off-site treatment. This includes, but is not limited to, first aid and confined space rescue.

1.15 WORKING ON OR NEAR WATER:

A. Life jackets and work vests shall be inspected before and after each use.

B. Ring buoys or Class IV rescue device with at least 90 feet of line shall be provided and readily available for employee rescue operations.

C. The distance from ring buoys to each worker shall not exceed 200 feet.

D. At least one lifesaving skiff shall be immediately available at locations where employees are working over water and/or the local coast guard shall be notified when working in navigable waterways.

E. Under no circumstances will team members enter water bodies without protective clothing (e.g.; waders, wet suit)

F. At least one person should remain on shore as a lookout if other methods of rescue are not available.

1.16 EXCAVATIONS

A. A Competent person shall determine the proper slope or identify engineering controls for all excavations in the CCR area.

B. An inspection of the banks shall be made and documented at least daily to determine any impact of the excavation.

C. Excavation equipment shall be operated in accordance with the Contractor's Health and Safety Plan and the manufacturer's recommendations.

2.0 CONTRACTOR'S FACILITIES

2.1 Temporary chemical toilet accommodations shall be furnished and maintained by Contractor for the use of his employees. Location shall be as directed by Purchaser's Representative. Use of Purchaser's toilet facilities by Contractor's employees is not permitted.

2.2 Contractor shall provide his own storage vessels, coolers, ice, water containers, etc., as required for his own drinking water use. Contractor shall supply a trash can with each drinking water container to receive used paper cups. Contractor shall maintain drinking water container, supply suitable water cups and dispose of trash as required. Open drinking cups and containers in the plant areas are not permitted.

2.3 Each Contractor is expected to pre-arrange medical emergency services for on-site and off-site treatment. This includes, but is not limited to, first aid and confined space rescue.

2.4 FIRE PROTECTION FACILITIES

A. Contractor shall provide his own temporary fire protection facilities for the equipment and materials furnished by him or by Purchaser and for his temporary construction buildings and structures. This equipment shall be maintained and inspected in accordance with applicable NFPA codes.

B. Furnish a suitable quantity and type of portable fire extinguishers and equipment, to meet OSHA and applicable codes.

2.5 Purchaser will not furnish any additional illumination of aisles, passages in the buildings, floodlighting of outdoor areas or lighting inside equipment other than that which is existing. Any additional lighting required by the Contractor shall be provided by the Contractor.

2.6 Contractor shall provide and maintain suitably located distribution centers with fused switching equipment and Ground Fault Interruption protection. The equipment supplied shall comply with OSHA regulations and standards.

2.7 Contractor shall supply all adapters and equipment required to connect to station air, water, and electrical systems. All air hoses shall be safety clipped together.

2.8 Any heating facilities required for the performance of the Work shall be furnished, maintained, and removed by Contractor. Open fires WILL NOT BE PERMITTED at any time. Heating equipment shall be as approved by Purchaser's Representative.

3.0 CONTRACTOR'S TOOLS AND EQUIPMENT

3.1 TOOLS AND EQUIPMENT

A. Contractor shall maintain, inspect and store tools and equipment for safe and proper use. This includes guards, shields, safety switches and electrical cords.

B. Contractor shall provide hoisting equipment as required to perform the Work. Provide all the necessary guards, signals, and safety devices required for its safe operation. Construction and operation of hoisting equipment shall comply with all applicable requirements of ANSI A10.5, the AGC Manual of Accident Prevention in Construction, and to all applicable federal, state, and local codes. Hoisting equipment shall not be used to transport personnel.

3.2 RIGGING

A. Contractor shall design, furnish, and maintain rigging required for the Work. All rigging plans must be designed by an Illinois licensed structural engineer.

B. Purchaser reserves the right to examine Contractor's design calculations, engineering data, plans, and procedures. Contractor shall submit any documentation requested by the Purchaser for the purpose of this review, including, but not limited to, calculations, diagrams and documents associated with computer-aided analyses and programs. If requested information is considered proprietary by Contractor, Contractor shall allow the Purchaser to review the information at Contractor's offices with the understanding that no copies of proprietary information will be given to the Purchaser. Purchaser's review and approval of submitted information is for general detail only and will not relieve the Contractor of responsibility for meeting all requirements and for accuracy.

C. Lifting and rigging areas shall have the target area and corresponding personnel access landings barricaded with "red" safety tape or hard barriers. No one is allowed under the load or in the target area during lifts.

D. All cranes, hoists, or derricks shall be operated in compliance with existing State and Federal regulations or orders. Cranes and hoists shall be inspected in accordance with OSHA and ANSI requirements. Cranes and hoists shall not be operated near high voltage lines or equipment until a safe operating clearance plan has been established.

4.0 TRAINING PROGRAM

A. All Midwest Generation employees, contract workers, and third-party contractors must complete a training program before they are allowed to perform work on Midwest Generation property. The training program informs employees, contract workers, and third-party contractors of the hazards associated with the CCR surface impoundments.

B. The training program consists of the following components to ensure employees, contract workers, and third-party contractors understand and are able to respond effectively:
   1. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment,
   2. Communications and alarm systems,
   3. Response to fires or explosions,
   4. Response to a spill or release,
      - Spills and releases to the ground
      - Spills and releases to water
      - Catastrophic releases
   5. Contractor training;
      - OSHA 29 CFR 1910.120 – Employees are trained to first responder awareness level
      - 29 CFR 1926.65 – Contract works and third-party contractors must be trained by their employers prior to working at Midwest Generation stations
      - OSHA 10- or 30-hour construction safety training – Contractors must provide qualified personnel as appropriate along with specialized training documentation
   6. Information about chemical hazards and hazardous materials
      - Surface impoundments contain CCR such as bottom ash and slag
      - CCR may be present in water or as respirable dust
      - CCR may contain heavy metals, such as arsenic, barium, cadmium, chromium, lead, mercury, and selenium
      - CCR exposure routes are skin contact and inhalation
      - Prolonged exposure potentially can cause illness
   7. Use of engineering controls, administrative controls, and personal protective equipment (PPE
      - Engineering Controls – Suppress dust and availability of eye wash stations and safety showers
      - Administrative Controls – Housekeeping, respiratory protection, and use of PPE

C. This Safety and Health Plan along with the training program will be reviewed and updated on annual basis, as needed.

ATTACHMENT 1

Lafarge Fly Ash and Bottom Ash (Ash)

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 04/21/2015 Date of issue: 12/18/2014 Supersedes Date: 03/01/2014 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Lafarge Fly Ash and Bottom Ash (Ash)

Synonyms: Coal Fly Ash, Class F Fly Ash, Class C Fly Ash, Type CI Fly Ash, Type CH Fly Ash, Type F Fly Ash, Lignite Coal Fly Ash, Subbituminous Coal Fly Ash, Anthracite Coal Fly Ash, Bituminous Coal Fly Ash, Bottom Ash, Ash

1.2. Intended Use of the Product

Fly Ash and Bottom Ash are used as a supplementary cementitious or pozzolanic material for cement, concrete and concrete products. It is also used in soil stabilization and as filler in asphalt and other products that are widely used in construction.

1.3. Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.
8700 West Bryn Mawr Avenue, Suite 300
Chicago, IL 60631
Information: 773-372-1000 (9am to 5pm CST)
email: SDSinfo@Lafarge.com
Website: www.lafarge-na.com

1.4. Emergency Telephone Number

Emergency Number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Eye Irrit. 2B H320
Carc. 1A H350
STOT RE 1 H372
Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS08

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) :
H320 - Causes eye irritation.
H350 - May cause cancer (Inhalation).
H372 - Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements (GHS-US) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear eye protection, protective clothing, protective gloves, and respiratory protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

2.4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

3.2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Ashes, residues	(CAS No) 68131-74-8	< 100	Eye Irrit. 2B, H320
Quartz	(CAS No) 14808-60-7	0 - 10	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372

Fly ash and bottom ash are byproducts from the combustion of coal. Trace amounts of chemicals may be detected during chemical analysis. For example the chemicals identified can include carbon and complex silicates or oxides of aluminum (Al), calcium (Ca), magnesium (Mg), sodium (Na), sulfur (S), potassium (K), titanium (Ti), iron (Fe) and phosphorus (P). Chemical identity: MxOySiO2 (M = Al, Ca, Mg and other minor metal, with bound silica (SiO2)). Chemical analysis of fly ash and bottom ash also indicate the presence of trace amounts of metals, such as: Arsenic (As), Barium (Ba), Beryllium (Be), Cobalt (Co), Lead (Pb), and Manganese (Mn).

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. If exposed or concerned: Get medical advice/attention.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Get medical advice and attention if you feel unwell.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Causes damage to organs through prolonged or repeated exposure.

Inhalation: May cause respiratory irritation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease.

Skin Contact: Ash may cause dry skin, discomfort, and irritation. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Eye Contact: Causes eye irritation. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Causes damage to organs through prolonged or repeated exposure. May cause cancer by inhalation.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Non-combustible.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not allow run-off from fire fighting to enter drains or water sources. Do not breathe fumes or vapors from fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: None.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Do not breathe dust.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause dust to become airborne. Avoid inhalation of dust. Wear appropriate protective equipment as described in Section 8. Do not wash product down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Cutting, crushing or grinding cement clinker, hardened cement, concrete or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash hands and forearms thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Ensure all national/local regulations are observed. Avoid creating or spreading dust.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

Storage Area: Store locked up.

7.3. Specific End Use(s)

Fly Ash and Bottom Ash are used as a supplementary cementitious or pozzolanic material for cement, concrete and concrete products. It is also used in soil stabilization and as filler in asphalt and other products that are widely used in construction.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
USA OSHA	OSHA PEL (STEL) (mg/m³)	250 mppcf/%SiO_2+5, 10mg/m^3/%SiO_2+2

USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³ (respirable dust)
USA IDLH	US IDLH (mg/m³)	50 mg/m³ (respirable dust)
Alberta	OEL TWA (mg/m³)	0.025 mg/m³ (respirable particulate)
British Columbia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable)
Manitoba	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	0.1 mg/m³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Nunavut	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass)
Northwest Territories	OEL TWA (mg/m³)	0.1 mg/m³ (respirable mass)
Ontario	OEL TWA (mg/m³)	0.10 mg/m³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
Québec	VEMP (mg/m³)	0.1 mg/m³ (respirable dust)
Saskatchewan	OEL TWA (mg/m³)	0.05 mg/m³ (respirable fraction)
Yukon	OEL TWA (mg/m³)	300 particle/mL

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing. Dust formation: dust mask.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	Gray/black or brown/tan powder which may contain solidified masses
Odor	:	None
Odor Threshold	:	Not available
pH	:	4 - 12
Evaporation Rate	:	Not available
Melting Point	:	Not available
Freezing Point	:	Not available
Boiling Point	:	> 1000 °C (1832 °F)
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available

Relative Density	:	Not available
Specific Gravity	:	2 - 2.9
Solubility	:	Water: < 5 % (Slightly)
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability: Not available

10.3. Possibility of Hazardous Reactions: Not available

10.4. Conditions to Avoid: Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible Materials: Strong acids. Strong bases. Strong oxidizers.

10.6. Hazardous Decomposition Products: None.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

pH: 4 - 12

Serious Eye Damage/Irritation: Causes eye irritation.

pH: 4 - 12

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified.

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs through prolonged or repeated exposure.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease.

Symptoms/Injuries After Skin Contact: Ash may cause dry skin, discomfort, and irritation. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/Injuries After Eye Contact: Causes eye irritation. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Causes damage to organs through prolonged or repeated exposure. May cause cancer by inhalation.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg

Ashes, residues (68131-74-8)	
LD50 Oral Rat	> 2000 mg/kg

Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity No additional information available

Persistence and Degradability

Lafarge Fly Ash and Bottom Ash (Ash)	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

Lafarge Fly Ash and Bottom Ash (Ash)	
Bioaccumulative Potential	Not established.

12.4. Mobility in Soil Not available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sewage Disposal Recommendations: Do not empty into drains. Do not dispose of waste into sewer.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

14.4. In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Lafarge Fly Ash and Bottom Ash (Ash)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

Quartz (14808-60-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ashes, residues (68131-74-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

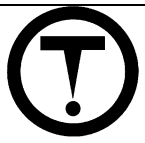
15.2. US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Quartz (14808-60-7)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

15.3. Canadian Regulations

Lafarge Fly Ash and Bottom Ash (Ash)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects



Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Ashes, residues (68131-74-8)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 04/21/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Carc. 1A	Carcinogenicity Category 1A
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H320	Causes eye irritation
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

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An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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