Guidance: Hazard Communication Program at Grain Handling, Feed, Ingredient & Processing Facilities

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Section 1: Introduction

HAZARD COMMUNICATION POLICY GUIDANCE DOCUMENT FOR GRAIN HANDLING, FEED, INGREDIENT AND PROCESSING FACILITIES

This guide provides a basic overview of the changes made to the existing hazard communications standard (HCS). As such, it should be viewed as a foundation upon which individual companies can build their own tailored plans specific to their facility, operations, personnel, and other conditions. Sample documents found in the appendices provide templates that may be used to update a site-specific hazard communication program.

This document is based on Federal Occupational Safety and Health Administration (OSHA) standards. More than half the states in the U.S. administer their own job safety and health programs (State Plans). These State Plans operate with the approval of Federal OSHA so long as the programs are "at least as effective" as the Federal OSHA program. However, these states may have standards more stringent than Federal OSHA. As a result, employers operating in a State Plan jurisdiction must comply with the regulations, standards and policies of that State Plan.

BACKGROUND

In March 2012, OSHA updated the HCS - 1910.1200 - that was promulgated in 1994, to conform to the United Nations Globally Harmonized Standard for Classification of Chemicals (GHS). The primary changes to the existing HCS are related to combustible dust, safety data sheets and labeling.

The HCS requires chemical manufacturers, distributors and importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products.

The updated standard (HCS 2012) requires training to have been conducted by Dec. 1, 2013, on the standard's new labels and pictograms, as well as standardized data sheets. The standard applies to all U.S. employees who come into contact with hazardous chemicals in the workplace. The HCS historically has been one of the most frequent violations cited by OSHA inspectors, often because employers do not have a written hazard communication compliance program or conduct the required training of employees.

Importantly, the new training requirements do not change the basic requirements for employers, such as the obligation to:

1) Ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;
2) Maintain SDS; and

3) Ensure that SDS are readily accessible to employees during each work shift.

The revised standard also still requires that employers develop, implement and maintain a written hazard communication program.

Grain handling facilities are considered "manufacturers" of a "hazardous chemical" (i.e. grain dusts). For the grain, feed and processing industry, the primary implication of the new requirements is that, starting June 1, 2015, raw grains and oilseeds, as well as some feeds and ingredients, shipped to downstream customers will be required to comply with OSHA's requirement to issue an SDS.

The end result is that bulk or bagged shipments of products that could produce combustible dusts when subsequently used in "processing" or in other ways where dust could be generated are potentially subject to the new rules. For the industry, this implies that SDSs would need to be developed.

SUMMARY OF GLOBALLY HARMONIZED STANDARD FOR LABELING

The new GHS requires chemical manufacturers and importers to evaluate the chemicals they produce or import and provide hazard information to employers and workers by putting labels on containers and preparing safety data sheets. The modified standard provides a single set of harmonized criteria for classifying chemicals according to their health and physical hazards and specifies hazard communication elements for labeling and SDS.

Major Changes to the Hazard Communication Standard

- **Hazard classification:** Chemical manufacturers and importers are required to determine the hazards of the chemicals. Hazard classification under the new, updated standard provides specific criteria to address health and physical hazards, as well as classification of chemical mixtures.

- **Labels:** Chemical manufacturers and importers must provide labels that include signal words, pictograms, hazard statements, and precautionary statements for each hazard class and category.

- **Safety Data Sheets:** The new format requires 16 specific sections.

- **Information and training:** To facilitate understanding of the new system, the new standard requires that workers be trained by December 1, 2013 on the new label elements and safety data sheet format, in addition to the current training requirements.

Effective Completion Date	Requirement(s)	Who
Dec. 1, 2013	Train employees on the new label elements and SDS format.	Employers
June 1, 2015	Comply with all modified provisions of this final rule, except distributor extension	Chemical manufacturers, importers, distributors and employers
Dec. 1, 2015	Distributors may ship products labeled by manufacturers under the old system until December 1, 2015.	Distributors
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition Period	Comply with either 29 CFR 1910.1200 (this final standard), or the current standard or both.	All chemical importers, distributors and employers

Global implementation: The new system is being implemented throughout the world by countries including Canada, the European Union, China, Australia and Japan.

Hazard Communication Safety Data Sheets: The HCS requires chemical manufacturers, distributors, or importers to provide SDS (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; and restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First aid measures includes important symptoms/ effects, acute, delayed; required treatment.

Section 5, Firefighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

Section 16, Other information, includes the date of preparation or last revision.

*Note: Since other agencies regulate this information, OSHA will not be enforcing Section 12 through Section 15(29 CFR 1910.1200(g)(2)).

Employers must ensure that SDSs are readily accessible to employees. See Appendix D of 1910.1200 for a detailed description of SDS contents.

Section 2: Labeling

FEED AND FOOD LABELING EXEMPTION FROM OSHA HCS LABELING STANDARD DUE TO FDA LABELING REGULATION AND REQUIREMENTS

Feed and Food Labeling

Labels have always been required under the HCS, but "chemicals" are exempt if they are subject to the labeling requirements of the Federal Food, Drug and Cosmetic Act (FFDCA) (21 U.S.C. 301 et seq.) and regulations adopted under that act, including materials intended for use as ingredients in food, whether the food is packaged or in bulk form. HCS 2012 does not amend the pre-existing labeling exemption under HCS for food and agricultural products at 29 C.F.R. § 1910.1200(b)(5)(iii).

As a result, feed and ingredients that are subject to FDA labeling requirements, continue to be granted an exemption by OSHA from the HCS labeling requirements, as long as feed-related materials are being used and sold within the feed or food processing chain. Any feed or food products sold for use outside the feed and food processing chain would be subject to the HCS labeling requirements (outlined in Appendix A).

Language from 1994 and 2012 Edition of HCS: *Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device or product, including materials intended for use as ingredients in such products (e.g. flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C. 151 et seq.), and regulations issued under those acts, when they are subject to the labeling requirements under those Acts by either the Food and Drug Administration or the Department of Agriculture.*

HCS Labeling of Whole Grain Shipments – Factors to Consider

Whole grains (e.g. corn, wheat and soybeans) are also subject to labeling requirements of the FFDCA and are therefore, exempt from the HCS labeling requirements as provided by 29 CFR 1910.1200(b)(5). The most relevant FFDCA provisions pertaining to this issue are the misbranding provisions found at 21 U.S.C. §343, which include, "A food shall be deemed to be misbranded (i) unless its label bears (1) the common or usual name of the food, if any there be." Most detailed feed labelling requirements are established within state laws.

Despite this, the 2012 edition of the HCS also states whole grain is required to be labeled. Paragraph f(4) specifically states, "…solid metal (such as a steel beam or a metal casting), solid wood, or plastic items that are not exempted as articles due to their downstream use, ***or shipments of whole grain***, the required label may be transmitted to the customer at the time of the initial

shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes.

In light of the ambiguous requirements on whether whole grain is required to have an OSHA label or not, individual companies should make their own determination on whether or not to provide such label with the SDS to a downstream user.

Section 3: Classification

OSHA GUIDANCE DOCUMENTS FOR COMPLIANCE SAFETY AND HEALTH OFFICERS

Proper Product Classification

On December 27, 2013, OSHA issued a ***memorandum*** designed to provide guidance for Compliance Safety and Health Officers (CSHOs) to use in determining whether manufacturers and importers have properly classified their products for combustible dust hazards under both the current version and the revised HCS.

Compliance with Standard by June 1, 2015

On February 9, 2015, OSHA issued a memorandum to its Regional Administrators outlining how OSHA enforcement personnel will enforce the HCS for chemical manufacturers, importers, and distributors who may have difficulty complying with the upcoming June 1, 2015, regulatory deadline. Essentially, the memo outlines how OSHA will define "reasonable diligence" and "good faith efforts" for purposes of compliance and establishes new dates for future compliance.

"Reasonable diligence" and "good faith efforts" are in reference to whether facilities have made the attempt to gather the necessary info from "upstream" users to develop the necessary SDSs and labels for their final products as of June 1, 2015. The memo states that a manufacturer or importer must create HCS 2012-compliant SDSs within six months from the date it receives all of the hazard information for the ingredients in a mixture.

LANGUAGE FROM HCS 2012 PREAMBLE

Definition of Combustible Dust (Page 17705): The agency is not adding a definition for combustible dust to the final rule given ongoing activities in the specific rulemaking, as well as in the UN Subcommittee. However, guidance is being provided through existing documents, including the Combustible Dust National Emphasis Program Directive CPL 03–00–008. This directive includes an operative definition, as well as provides information about current responsibilities in this area. In addition, there are a number of voluntary industry consensus standards (particularly those of the National Fire Protection Association) that address combustible dust, and were noted by commenters as providing further guidance in this area.

Labeling of Combustible Dust (Page 17705-17706): OSHA has already addressed a similar situation under paragraph (f)(4) of the final standard, which addresses solid metal, solid wood, plastic and shipments of whole grain that present no hazard in shipping, but which are used in such a way in downstream operations that employees can be exposed to hazards. In this situation, the

downstream employer needs label information about the hazards to protect employees, but OSHA determined that such label information does not need to accompany the product. Therefore, paragraph (f)(4) allows the chemical manufacturer or importer to transmit the label to the customer at the time of the initial shipment, but the label does not need to be included with subsequent shipments unless it changes. This provides the needed information to the downstream users on the potential hazards in the workplace, while acknowledging that the solid metal or other materials do not present the same hazards that are produced when these materials are processed under normal conditions of use.

Many products that are a combustible dust hazard when processed are similar in nature and therefore paragraph (f)(4) would apply. A shipment of grain, for example, does not present a combustible dust hazard in the shipped form. However, when processed downstream in a plant, such hazards are a concern, and the employer needs the label information to address properly the hazard in the workplace. Since this is a normal condition of use for the grain, the chemical manufacturer or importer must provide the information at the time of the initial shipment, and in the future if there is new information regarding the hazards or protective measures. A SDS must always be provided.

In other situations where the material is shipped in a form that is potentially combustible without further processing, the chemical manufacturer or importer must have appropriate labels on the containers when shipped under the requirements of paragraph (f)(1). If the chemical manufacturer labels the product for combustible dust, the label must use the required labeling elements in C.4.30.

Classification of Combustible Dust (Pages 17706): Combustible dust has been added to the definition for hazardous chemical, and thus all of the provisions of the standard as amended by the final rule that apply to hazardous chemicals will also apply to combustible dusts, including SDS and worker training. Employers with workplaces where combustible dusts are generated must comply with the workplace labeling requirements in paragraph (f)(6).

GRAIN DUST RESPIRATORY HAZARDS

Under the 1994 HCS, OSHA categorizes grain dust from wheat, oats and barley as a hazardous substance (please note prior MSDS in Appendix G). OSHA sets limits on employees' exposure to grain dust under its Permissible Exposure Limits (PELs). The limits were set at 10 milligrams per cubic meter for wheat, oat and barley dust and at 15 milligrams for other organic dusts (which include dusts from all other grains). The exposure limits are calculated over an eight-hour, time-weighted average. Under OSHA rules, if limits are exceeded, special precautions must be taken to reduce employee exposure, including use of dust control equipment, administrative controls or respiratory protection.

HAZARD CLASSIFICATION

The hazard classification approach in the GHS is quite different from the performance-oriented approach in the 1994 HCS. In the 1994 HCS, manufacturers and importers were required to

evaluate chemicals produced or imported by them to *determine* the nature of any hazard(s) that may be associated with such substances.

The 2012 HCS has specific criteria for each health and physical hazard, along with detailed instructions for hazard evaluation and determinations as to whether mixtures of the substance are covered. OSHA has included the general provisions for hazard classification in paragraph (d) of the revised rule, and added extensive appendixes that address the criteria for each health or physical effect.

Under the 2012 HCS, the term ***determine*** has been changed to ***classify***. Now manufacturers and importers are required to evaluate chemicals produced in their workplaces or imported by them to *classify* the chemicals. For each chemical, the chemical manufacturer or importer is required to identify the hazard classes, and where appropriate, the category of each class that applies to the chemical being classified. Employers are not required to classify chemicals unless they choose not to rely on the classification performed by the chemical manufacturer or importer for the chemical to satisfy this requirement.

Mandatory Appendices A and B provide classification guidance for Health Hazards and Physical Hazards, respectively. The hazard classification criteria contained in the HCS 2012 is test method-neutral. That is, the person classifying a chemical or substance should use available data and no additional testing is required to classify a chemical.

(d) *Hazard classification.*

(d)(1)Chemical manufacturers and importers shall evaluate chemicals produced in their workplaces or imported by them to classify the chemicals in accordance with this section. For each chemical, the chemical manufacturer or importer shall determine the hazard classes, and where appropriate, the category of each class that apply to the chemical being classified. Employers are not required to classify chemicals unless they choose not to rely on the classification performed by the chemical manufacturer or importer for the chemical to satisfy this requirement.

(d)(2) Chemical manufacturers, importers or employers classifying chemicals shall identify and consider the full range of available scientific literature and other evidence concerning the potential hazards. There is no requirement to test the chemical to determine how to classify its hazards. Appendix A to §1910.1200 shall be consulted for classification of health hazards, and Appendix B to §1910.1200 shall be consulted for the classification of physical hazards.

Chemicals on the following lists compiled by the following entities are considered hazardous by OSHA:

- 29 CFR 1910, Subpart Z, *Toxic and Hazardous Substances*, Occupational Safety and Health Administration (OSHA), and
- Threshold Limit Values *for Chemical Substances and Physical Agents in the Work Environment*, American Conference of Governmental Industrial Hygienists (ACGIH).

In addition, chemicals that have been evaluated and found to be a suspected or confirmed carcinogen in the following sources must be reported as such:

- National Toxicology Program (NTP),
- *Annual Report on Carcinogens*,
- International Agency for Research on Cancer (IARC),
- *Monographs*, and
- Regulated by OSHA as a carcinogen.

MIXTURES

Mixtures are defined as a mixture or solution composed of two or more substances in which they do not react. The 2012 HCS criteria for mixtures vary by hazard class. As a result, manufacturers of products such as feed ingredients, premixes and final feed products are obligated to create and distribute a SDS for their product if it is "hazardous" according to OSHA criteria. The hazards within the product could include combustible dust from grain, as well as respirable dusts from chemicals such as selenium or limestone.

For physical hazards, such as flammability and/or combustibility, the manufacturer is required to consider potential exposures that may occur that are associated with their finished products under normal conditions of use or in foreseeable emergencies. If the finished product presents a flammability and/or combustibility hazard, a SDS for the product is to be developed that includes:

- Chemical or common names of ingredients that present a physical hazard.
- Physical and chemical characteristics of the hazard.
- Generally applicable precautions for safe handling and use, such as procedures for cleaning up spills, and protective measures to be taken during fire-fighting activities.
- Generally applicable control measures, such as engineering controls, work practices or protective equipment.

For health hazards, the manufacturer is required to compile the information from the SDSs provided by ingredient suppliers into a separate SDS for each specific finished product if the concentration of the finished product's hazardous component(s) meet or exceed 1 percent for typical hazards or 0.1 percent for special hazards, such as carcinogens, reproductive toxicity or germ cell mutagenicity.

Hazard class	Cut-off value/concentration limit
Acute toxicity	≥ 1.0%
Skin corrosion/Irritation	≥ 1.0%
Serious eye damage/eye irritation	≥ 1.0%
Respiratory/Skin sensitization	≥ 0.1%
Germ cell mutagenicity (Category 1)	≥ 0.1%
Germ cell mutagenicity (Category 2)	≥ 1.0%
Carcinogenicity	≥ 0.1%
Reproductive toxicity	≥ 0.1%
Specific target organ toxicity (single exposure)	≥ 1.0%
Specific target organ toxicity (repeated exposure)	≥ 1.0%
Aspiration hazard (Category 1)	≥ 10% of Category 1 ingredient(s) and kinematic viscosity ≤ 20.5 mm^2/s at 40°C
Aspiration hazard (Category 2)	≥ 10% of Category 2 ingredient(s) and kinematic viscosity ≤ 14 mm^2/s at 40°C
Hazardous to the aquatic environment	≥ 1.0%

(d)(3) Mixtures.

(d)(3)(i) Chemical manufacturers, importers, or employers evaluating chemicals shall follow the procedures described in Appendices A and B to §1910.1200 to classify the hazards of the chemicals, including determinations regarding when mixtures of the classified chemicals are covered by this section.

(d)(3)(ii) When classifying mixtures they produce or import, chemical manufacturers and importers of mixtures may rely on the information provided on the current safety data sheets of the individual ingredients except where the chemical manufacturer or importer knows, or in the exercise of reasonable diligence should know, that the safety data sheet misstates or omits information required by this section.

In addition, according to the new requirements, a general SDS can be developed for similar products if the products are essentially the same but the specific composition varies from mixture to mixture.

As an example of how to apply OSHA's hazard classification criteria, consider a general mixture produced by a feed manufacturer that includes limestone and selenium in amounts that meet or exceed 1 percent in the finished product. Both limestone (calcium carbonate) and selenium (sodium compounds) have limits for air contaminants listed within 29 CFR 1910, Subpart Z Toxic and Hazardous Substances and therefore are considered hazardous chemicals by OSHA. Since the limestone and selenium levels within the finished product meet or exceed 1 percent, the feed manufacturer is obligated to create a SDS for the finished product that conveys the hazard information associated with limestone and selenium, as indicated by the SDSs provided to the feed manufacturer by its suppliers of limestone and selenium.

SDS Requirements for Mixtures

(g)(4) Where complex mixtures have similar hazards and contents (i.e. the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one SDS to apply to all of these similar mixtures.

Section 4: FAQs

FREQUENTLY ASKED QUESTIONS

Combustible Dust

1. **How does the OSHA Hazard Communication Standard (HCS) address combustible dust in the grain and feed supply chain?**

   In its revised 2012 HCS definitions section, OSHA has defined any chemical that is classified as a combustible dust to be a hazardous chemical. Whole grain, when processed, produces dust, which presents a potential combustible dust hazard, and is, therefore, considered by OSHA to be a "hazardous chemical" subject to the HCS.

Safety Data Sheet Requirements

2. **Who makes the determination if the use or sale of a company's product requires a Safety Data Sheet (SDS) for downstream customers?**

   Each company producing, importing or distributing a product is the responsible party for identifying chemical hazards associated with their grain, feed, ingredient or processed feed product. This includes but is not limited to "combustible dust." If a chemical or mixture is determined to be hazardous, the company is required by the HCS to create and provide their downstream customer with a SDS.

3. **Who develops the initial Safety Data Sheet for combustible dust in the supply chain?**

   The first point of compliance for developing a SDS for combustible dust is at the commercial storage or grain processing operation that first receives the product, and not the farm handling the grain. The SDS is then sent to the customer. The grain storage and processing operations, along with customers purchasing the product, are also subject to HCS requirements for employers, which include designing and implementing an effective protective program for their employees.

4. **How often do I need to provide a SDS to a downstream user or customer?**

   A SDS only needs to be provided with an initial shipment of a product to a downstream customer. A revised SDS needs to be provided if there any changes to a specific product being shipped require changes to the SDS.

5. **Am I responsible for giving my customer a SDS for a grain, ingredient or feed product that I resell but do not further process?**

   Yes, if you received a SDS from the supplier of that product, you must provide the same SDS to your customer with the initial shipment and again if the SDS is changed or updated.

6. **Does an ingredient supplier, premix blender or feed manufacturer have the option – when preparing a SDS for a product that is a mixture – to develop a single SDS for a product containing a mixture, or simply send along to the customer multiple SDSs for each identified hazard ingredient in the mixture?**

   The HCS no longer allows multiple SDSs for a mixture sold as a product to be combined or stapled together – one SDS must be prepared for the mixture as a whole. SDS information from suppliers can be used to prepare a single SDS.

Labeling Requirements

7. **Are labels required under the HCS for feed and grain products, including shipments of bagged and bulk feed?**

   Grain and feed products – including those in bulk or bagged form – in the grain and feed supply chain that are subject to the labeling requirements of the Federal Food, Drug and Cosmetic Act are not required to be labeled under the HCS.

   Importantly, however, OSHA has taken the position in the 2012 HCS that for whole grain, labeling is required. Thus, facilities should carefully weigh this factor is making its determination on whether to issue a label for whole grain shipments (See Appendix A).

8. **Do I need to label a truck or rail car that solely contains grain dust and not whole grain?**

   Grain dust used as a feed ingredient is subject to FDA labeling requirements, and therefore a HCS label is not required. Grain dust that is NOT used as a feed ingredient and transported by truck or rail is required to have an OSHA-compliant HCS label.

9. **Is labeling required under HCS for Grains Used for Biofuels?**

   Similar types of grains used to produce animal feed are also used by downstream parties in ethanol production. A SDS for whole grain is required for these products whether they are used to produce animal feed or ethanol. However, regardless of the nature of their end use, food or feed products (including whole grain) are already subject to labeling requirements under FDA.

10. Are HCS labels required for products an ingredient blender supplies and ships for non-animal feed uses, such as the production of fertilizers?

Yes. In certain instances, a label under the HCS is required when a chemical sold to a customer is not subject to labeling under FDA requirements, such as for the production of fertilizer.

Transportation

11. Since grain dust is defined as a hazardous chemical by OSHA under the HCS, will truck drivers need any additional training or need to have a hazardous material certification?

No. Grain dust is not considered a hazardous material while being transported. The Department of Transportation (DOT), not OSHA, is responsible for codifying items as hazardous while being shipped.

Bulk or Bagged Feed Sold to Feed Dealers or Farms

12. Do I need to provide an SDS for bulk or bagged feeds that I produce and sell to a farm or reseller dealer?

Bulk Feeds *– OSHA has clarified for the industry that an SDS must be delivered with the initial shipment of feed to the customer. If your company determines that your bulk feed product contains chemicals that may present a hazard (e.g., combustible dust or additives), you should provide an SDS for that product the first time you ship it to that customer and whenever the SDS is changed.*

Bagged Feeds *– For bagged feeds, OSHA has also clarified for the industry that an SDS is required. Wholesale or retail dealers can place the statement "SDS is available on request" at your operation for customers purchasing feed products. This is an accommodation for over the counter walk in sales, where purchasers include non-employers. Again, this is a different requirement than for bulk deliveries, where a SDS should accompany the initial product shipment.*

Generic SDS Can Be Used for Multiple Products *– In the case of both bagged and bulk feed sales, a generic SDS can be used for multiple products – the SDS can include ranges for ingredients determined to be a hazard under the HCS (e.g., combustible dust or additives) in lieu of individual SDSs for specific products. A generic SDS for grain and feed are available for use or reference in Appendices C and D of the HCS guidance document.*

EPA Requirements

13. Do I still need to be in compliance with EPA reporting requirements for MSDSs under Section 311/312 of the Emergency Planning and Community Right to Know Act?

OSHA has no authority over environmental issues, therefore hazards to the environment are not covered by the 2012 HCS (note: the HCS does allow supplemental environmental information to be added to SDSs and labels under the GHS framework, but OSHA is not including or enforcing any environmental data in the HCS).

However, questions have been raised concerning whether the new OSHA rule affects a company's compliance with EPA's Emergency Planning and Community Right to Know Act (EPCRA) Reporting Requirements, which reference "Material Safety Data Sheets" under the old HCS.

For reporting purposes under EPCRA Section 311 (Material Safety Data Sheets) and 312 Emergency and Hazardous Chemical Inventory Forms), it is understood at this time that for those chemicals that meet the FDA exemption under EPCRA 311(e)(1), the facility is not required to report under EPCRA 311/312.

We will be monitoring activity by EPA to determine whether the agency will seek changes to these requirements in the future.

Section 5: Appendices

SDS TRAINING SECTION-BY-SECTION

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of 29 CFR 1910.1200. The SDS preparers may also include additional information in various section(s).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., firefighting). This information should be helpful to those who need to find the information quickly.

Sections 9 through 11 and section 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN GHS, but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

A description of all 16 sections of the SDS, along with their contents, is presented in Appendix B.

This section also contains generic SDSs for grain and feed (appendices C and D respectively) for your use and/or reference.

APPENDIX A: OSHA Labeling Requirements

Labels on ***shipped*** containers of hazardous chemicals change June 1, 2015. The primary change is that information on labels has been standardized. There are certain types of information required to appear on labels. All suppliers have the same requirements, so labels should be more consistent in approach than current labels.

- "Signal word" means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe. The term "caution" is no longer used.
- "Pictogram" means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical.
- Nine pictograms are designated under this standard for application to a hazard category.

Health Hazard 	**Flame** 	**Exclamation Mark** 
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder 	**Corrosion** 	**Exploding Bomb** 
• Gases under Pressure	• Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame over Circle 	**Environment (Non Mandatory)** 	**Skull and Crossbones** 
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

- "Hazard statement" means a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.

  Example: Fatal if swallowed (Acute Oral Toxicity)

- "Precautionary statement" means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

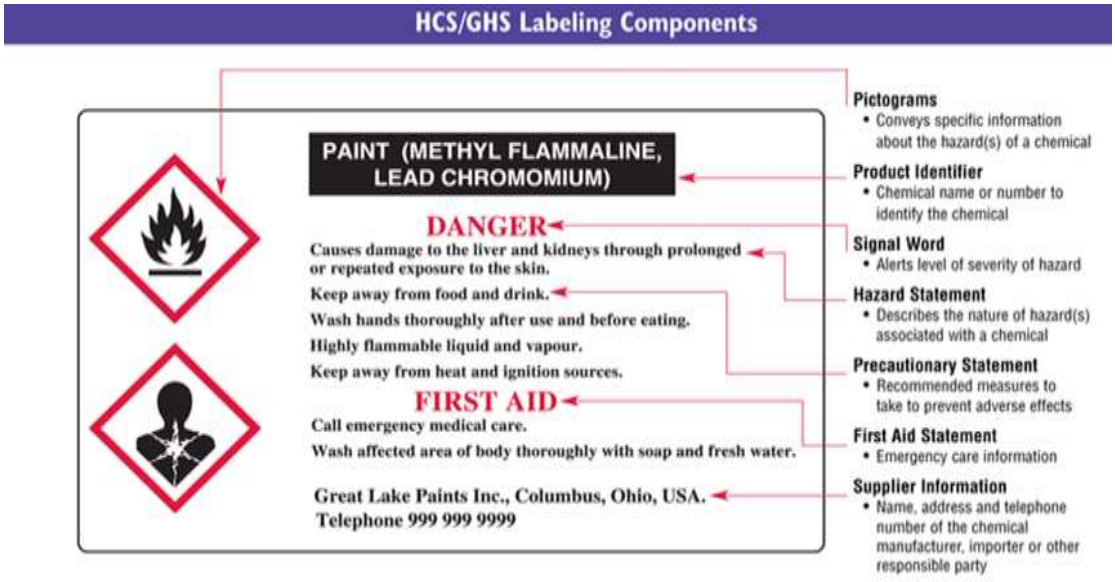
  Example: Do not eat, drink, or smoke when using this product

  Example: Keep container tightly closed

Labels on shipped containers must include: 1) Product Identifier, 2) Signal Word, 3) Pictogram, 4) Hazard Statement(s), 5) Precautionary Statement(s) – for each hazard class and category, and 6) Supplier Identification (Name, Address, Phone Number).

Sample Label

The following is a sample label affixed to a product denoting the identity of the hazardous chemical, the appropriate hazard warnings and the identity and location of the manufacturer.



Temporary/portable containers and stationary containers, such as chemical storage tanks, also must be labeled. **Portable containers** into which hazardous chemicals are transferred need not be labeled if they will be used only by the employee performing the transfer during his or her workshift.

In **stationary** process containers, signs, placards, process sheets, batch tickets, operating procedures or other written material may be used to satisfy the labeling requirement.

HCS 2012 Language

(f) *Labels and other forms of warning*—(1) *Labels on shipped containers.*
The chemical manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged, or marked. Hazards not otherwise classified do not have to be addressed on the container. Where the chemical manufacturer or importer is required to label, tag or mark the following information shall be provided:

(i) Product identifier;
(ii) Signal word;
(iii) Hazard statement(s);
(iv) Pictogram(s);
(v) Precautionary statement(s); and,
(vi) Name, address, and telephone
of the chemical manufacturer,
importer, or other responsible party.

f(2) The chemical manufacturer, importer, or distributor shall ensure that the information provided under paragraphs (f)(1)(i) through (v) of this section is in accordance with Appendix C to § 1910.1200 for each hazard class and associated hazard category for the hazardous chemical, prominently displayed, and in English (other languages may also be included if appropriate).

f(3) The chemical manufacturer, importer, or distributor shall ensure that the information provided under paragraphs (f)(1)(ii) through (iv) of this section is located together on the label, tag, or mark.

f(4*) Solid materials.* (i) For solid metal (such as a steel beam or a metal casting), solid wood, or plastic items that are not exempted as articles due to their downstream use, or shipments of whole grain, the required label may be transmitted to the customer at the time of the initial shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes;

(ii) The label may be transmitted with the initial shipment itself, or with the safety data sheet that is to be provided prior to or at the time of the first shipment; and,

(iii) This exception to requiring labels on every container of hazardous chemicals is only for the solid material itself, and does not apply to hazardous chemicals used in conjunction with, or known to be present with, the material and to which employees handling the items in transit may be exposed (for example, cutting fluids or pesticides in grains would dilute the message).

C.4.30 Label elements for OSHA defined hazards

			Pictogram *No Pictogram*
Hazard category	**Signal word**	**Hazard statement**	
Combustible Dust*	Warning	May form combustible dust concentrations in air	

** The chemical manufacturer or importer shall label chemicals that are shipped in dust form, and present a combustible dust hazard in that form when used downstream, under paragraph (f)(1); 2) the chemical manufacturer or importer shipping chemicals that are in a form that is not yet a dust must provide a label to customers under paragraph (f)(4) if, under normal conditions of use, the chemicals are processed in a downstream workplace in such a way that they present a combustible dust hazard; and 3) the employer shall follow the workplace labeling requirements under paragraph (f)(6) where combustible dust hazards are present.*

APPENDIX B: SDS Training Section-by-Section

Section 1: Identification

This section identifies the chemical on the SDS, as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).

Section 2: Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category[1]).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3: Composition/Information on Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures and all chemicals where a trade secret is claimed. The required information consists of:

[1] Chemical, as defined in the HCS, is any substance, or mixture of substances.

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
    - Present above their cut-off/concentration limits or
    - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
    - A trade secret claim is made,
    - There is batch-to-batch variation, or
    - The SDS is used for a group of substantially similar mixtures.

Chemicals where a trade secret is claimed

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

Section 4: First Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5: Firefighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.

- Recommendations on special protective equipment or precautions for firefighters.

Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up).

Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment and providing advice on general hygiene practices (e.g., eating, drinking and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements).

Section 8: Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial, Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer or employer preparing the safety data sheet, where available.

- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Upper/lower flammability or explosive limits;
- Odor;
- Vapor pressure;
- Odor threshold;
- Vapor density;
- pH;
- Relative density;
- Melting point/freezing point;
- Solubility(ies);
- Initial boiling point and boiling range;
- Partition coefficient: n-octanol/water;
- Flash point;
- Auto-ignition temperature;
- Evaporation rate;
- Decomposition temperature;
- Flammability (solid, gas); and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential.

Section 10: Stability and Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability and other.
The required information consists of:

Reactivity

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11: Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50 percent of test animals in single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical, including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA.

Section 12: Ecological Information (Non-Mandatory)

This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (Kow) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

Section 13: Disposable Considerations (Non-Mandatory)

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS.

The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities.

Section 14: Transport Information (Non-Mandatory)

This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance)[2].
- UN proper shipping name[2].
- Transport hazard class(es)[2].
- Packing group number, if applicable, based on the degree of hazard.

[2] Found in the most recent edition of the United Nations Recommendations on the Transport of Dangerous Goods.

- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)). Guidance on transport in bulk (according to Annex II of MARPOL 73/78[3] and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)).
- Any special precautions that an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

Section 15: Regulatory Information

This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include:

- Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, DOT, EPA or Consumer Product Safety Commission regulations).

Section 16: Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

[3] MARPOL 73/78 means the International Convention for the Prevention of Pollution from Ships,1973, as modified by the Protocol of 1978 relating thereto, as amended.

APPENDIX C: Generic Safety Data Sheet for Grain

SECTION 1: IDENTIFICATION	
PRODUCT NAME:	**WHOLE GRAIN**
SDS NUMBER:	GRAIN
SYNONYMS/OTHER MEANS OF IDENTIFICATION:	
INTENDED USE:	FOOD
MANUFACTURER:	VARIOUS
EMERGENCY HEALTH AND SAFETY NUMBER:	
SDS INFORMATION:	PHONE: E-MAIL: URL:

SECTION 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION: COMBUSTIBLE DUST/RESPIRATORY HAZARD IF SMALL PARTICLES ARE GENERATED DURING FURTHER PROCESSING, HANDLING OR BY OTHER MEANS.

LABEL ELEMENTS:
SIGNAL WORD: WARNING

HAZARD STATEMENT(S): CLASS 2B EYE IRRITANT. MAY CAUSE BREATHING DIFFICULTIES IF INHALED.

IF SMALL PARTICLES ARE GENERATED DURING FURTHER PROCESSING, HANDLING OR BY OTHER MEANS, MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.

PRECAUTIONARY STATEMENT(S): DUST FROM PARTICULATES MAY BE A MECHANICAL EYE IRRITANT. RINSE EYES WITH WATER FOR SEVERAL MINUTES.

AVOID BREATHING DUST. EXCESSIVE INHALATION MAY AFFECT NOSE, THROAT AND LUNGS. AVOID IGNITION SOURCES: GRAIN DUST MAY BURN IF SUSPENDED IN AIR AND MAY CREATE A FLASH FIRE/ EXPLOSION HAZARD.

EMERGENCY OVERVIEW: DUST FROM PARTICULATES MAY BE MECHANICAL IRRITANT TO EYES. EXCESSIVE INHALATION OF GRAIN DUSTS MAY AFFECT NOSE THROAT, AND LUNGS. MAY FORM COMBUSTIBLE DUST CONCENTRATION IN AIR; SEE “EXPLOSION HAZARD” BELOW.

EXPLOSION HAZARD: GRAIN IS GENERALLY CONSIDERED NOT HAZARDOUS BUT DUST GENERATED THROUGH DOWNSTREAM ACTIVITIES THAT MAY REDUCE ITS PARTICLE SIZE (E.G., SHIPPING, HANDLING, TRANSFER TO BINS, ETC.) MAY CREATE A HAZARDOUS CONDITION.

IF EXPOSED TO AN IGNITION SOURCE, DUST MAY BURN. AIRBORNE DUST IN SUFFICIENT CONCENTRATIONS WHEN EXPOSED TO AN IGNITION SOURCE MAY FLASH OR, IN A CONFINED SITUATION, MAY FUEL AN EXPLOSION.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CASRN	CONCENTRATION
WHOLE GRAINS		UP TO 100%
FOREIGN MATERIAL (SUCH AS ORGANIC PLANT MATERIAL)		0-5%
GRAIN DUST		0-5%

SECTION 4: FIRST AID MEASURES

INHALATION:
REMOVE PERSON FROM EXPOSURE. SEEK MEDICAL ATTENTION FOR ANY BREATHING DIFFICULTY.

INGESTION:
IF SWALLOWED, GIVE SEVERAL GLASSES OF WATER TO DILUTE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

SKIN CONTACT:
WASH AFFECTED SKIN WITH SOAP AND WATER.

EYE CONTACT:
FLUSH EYES WITH WATER. SEEK MEDICAL ATTENTION AS NEEDED.

SECTION 5: FIREFIGHTING MEASURES

FLASH POINT (METHOD): N/A
FLAMMABLE LIMITS: **LEL:** UNKNOWN **UEL:** UNKNOWN
AUTOIGNITION TEMPERATURE: UNKNOWN
HAZARDOUS COMBUSTION PRODUCTS: OXIDES OF CARBON

SPECIAL FIREFIGHTING PROCEDURES: EXTINGUISH WITH WATER FOG, DRY CHEMICAL POWDERS OR FOAM. DO NOT USE STRONG STREAMS OF WATER OR DRY CHEMICAL IF DUST CAN BE DISPERSED INTO THE AIR. DUST PLACED IN SUSPENSION WITH AN IGNITION SOURCES PRESENT MAY FLASH OR EXPLODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: WHOLE GRAIN IS NOT EXPLOSIVE. FINE DUST DISPERSED IN AIR AT A SUFFICIENT CONCENTRATION MAY IGNITE IF EXPOSED TO AN IGNITION SOURCE.

SECTION 6: ACCIDENTAL RELEASE MEASURES

CLEAN UP WITH SOFT BRISTLE BROOM(S) OR A VACUUM APPROVED FOR A CLASS II HAZARDOUS LOCATION. DUST DEPOSITS SHOULD BE MAINTAINED TO A MINIMUM ON SURFACES, AS THESE COULD FORM AN EXPLOSIVE MIXTURE IF THEY ARE RELEASED INTO THE ATMOSPHERE IN SUFFICIENT CONCENTRATION. AVOID DISPERSAL OF DUST IN THE AIR (I.E., CLEANING DUST SURFACES WITH COMPRESSED AIR IN THE PRESENCE OF IGNITION SOURCE SHOULD NOT BE ALLOWED).

SECTION 7: HANDLING AND STORAGE

FINE DUST DISPERSED IN AIR AT A SUFFICIENT CONCENTRATION MAY IGNITE IF EXPOSED TO AN IGNITION SOURCE. REMOVE GRAIN DUST FROM AREA/PROCESSING EQUIPMENT PRIOR TO USING ANY HEAT PRODUCING EQUIPMENT SUCH AS ARC WELDERS, CUTTING TORCHES AND SPARK/HEAT PRODUCING TOOLS SUCH AS PORTABLE SURFACE GRINDERS. ACCORDING TO 29 CFR 1910.272(F) A HOT WORK PERMIT IS REQUIRED.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: WEAR AN APPROVED NIOSH DUST RESPIRATOR WHENEVER DUST CONCENTRATIONS IN THE WORK AREA ARE ABOVE ACGIH TLV/OSHA PELS

GRAIN DUST (WHEAT, OAT AND BARLEY)

OSHA PEL	ACGIH TLV
10 MG/M3	4MG/M3*

OTHER GRAINS

OSHA PEL	ACGIH TLV
15 MG/M3 (TOTAL) 5 MG/M3 (RESPIRABLE)	10 MG/M3*

** THIS TLV APPLIES TO NUISANCE PARTICULATES.*
THE GRAIN INDUSTRY BELIEVES THERE IS CURRENTLY INADEQUATE DATA TO SUPPORT THIS TLV.

VENTILATION: LOCAL EXHAUST: IF NEEDED
MECHANICAL (GENERAL): IF NEEDED

ENSURE THAT DUST HANDLING SYSTEMS (SUCH AS EXHAUST DUCTS, DUST COLLECTORS, VESSELS, AND PROCESSING EQUIPMENT) ARE DESIGNED IN A MANNER TO PREVENT THE ESCAPE OF DUST INTO THE WORK AREAS. USE ONLY APPROPRIATELY CLASSIFIED ELECTRICAL EQUIPMENT AND POWERED INDUSTRIAL TRUCKS.

PROTECTIVE GLOVES: N/A

EYE PROTECTION: SAFETY GLASSES / GOGGLES SUGGESTED IN DUSTY CONDITIONS

WORK/ HYGIENIC PRACTICES: GOOD PERSONAL HYGIENE PRACTICES SHOULD BE FOLLOWED. AVOID EXCESSIVE DUST ACCUMULATION AND CONTROL IGNITION SOURCES. WHERE APPROPRIATE, EMPLOY GROUNDING, VENTING, AND EXPLOSION RELIEF PROVISIONS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES IN PROCESSES CAPABLE OF GENERATING DUST AND/OR STATIC ELECTRICITY

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FLASH POINT (METHOD): N/A
FLAMMABLE LIMITS: **LEL:** UNKNOWN **UEL:** UNKNOWN
AUTOIGNITION TEMPERATURE: UNKNOWN

APPEARANCE:

NATURAL GRAIN COLOR – WHOLE GRAIN
GRAIN DUST - LIGHT, GRAYISH OR BROWN POWDER

UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: WHEN DISPERSED INTO THE AIR IN SUFFICIENT CONCENTRATIONS GRAIN DUST CAN EXPLODE IN THE PRESENCE OF AN IGNITION SOURCE. DO NOT ALLOW DUST TO BECOME DISPERSED INTO THE AIR, EVEN BY THE EXTINGUISHING AGENT. MINIMUM EXPLOSIVE CONCENTRATION IS 55 *G/M3*. HOWEVER, MOISTURE CONTENT, PARTICLE SIZE, CALORIC PROPERTIES, AND SPECIFIC INGREDIENTS ALSO AFFECT THE EXPLOSIVENESS OF GRAIN DUST.

THE FLASH POINT AND FLAMMABLE LIMITS ARE ACCURATE BECAUSE GRAIN DUST HAS NO FLASH POINT, LEL, OR UEL DUE TO ITS PROPERTIES. THE FIREFIGHTING MEASURES LISTED ARE IN ACCORD

WITH OTHER SIMILAR SDS.

FOR AN EXPLOSION TO OCCUR, FOUR CONDITIONS MUST EXIST: FIRST, OXYGEN MUST BE PRESENT. SECOND, THERE MUST BE AN IGNITION SOURCE (E.G. ELECTRICAL SHORT, SPARKS, ETC.). THIRD, THERE MUST BE FUEL (E.G. GRAIN DUST IN SUSPENSION). FOURTH, THERE MUST BE CONTAINMENT OF SUSPENDED GRAIN DUST (I.E. SILO, VESSEL, ETC.). ALTHOUGH AN EXPLOSION WILL NOT OCCUR IF THERE IS NO CONTAINMENT, THE DUST CAN STILL IGNITE, RESULTING IN A FIRE.

AS NOTED EXPLOSIONS ARE DEPENDENT UPON THE CONCENTRATION OF THE FUEL (E.G. GRAIN DUST SUSPENDED IN THE AIR. THE MINIMUM EXPLOSIVE CONCENTRATION (MEC) FOR GRAIN DUST IS AROUND 55 G/M3 THE MEC VARIES ACCORDING TO THE PARTICLE SIZE AND CALORIC PROPERTIES OF THE PRODUCT. IN ADDITION, THE SPECIFIC INGREDIENTS OF THE GRAIN DUST WILL AFFECT THE MEC. THEREFORE, THE LISTED MEC RANGE WOULD BE APPROPRIATE.

THE FOLLOWING INSERT TAKEN FROM "PREVENTING GRAIN DUST EXPLOSIONS" EXPLAINS EXPLOSIVE LIMITS FOR GRAIN DUST:

"A TEXAS A &M UNIVERSITY DUST CONTROL SCIENTIST SUGGESTS THAT THE MEC RANGE IS ABOUT 50 TO 150 GRAMS PER CUBIC METER, DEPENDING ON THE TYPE OF DUST AND THE SIZE OF PARTICLES (PARNELL, 1998). THIS EQUATES TO THE SAME MEC LEVEL USED BY THE NATIONAL GRAIN AND FEED ASSOCIATION (NGFA). NGFA STATES THAT THE BROAD, GENERALLY ACCEPTED MEC FOR GRAIN DUST EXPLOSIONS IS ABOUT 0.05 OUNCES PER CUBIC FOOT OF VOLUME. IT SAYS THAT THE OPTIMUM EXPLOSIVE CONCENTRATION (DEC) IS ABOUT 0.5 TO 1.0 OUNCES PER CUBIC FOOT - ABOUT 10 TIMES THE MEC (GILLIS, 1985, P. 43)."

ODOR: NO DISTINCT ODOR (OUT-OF-CONDITION PRODUCTS MAY BE SOUR OR MUSTY)

VAPOR PRESSURE: N/A **ODOR THRESHOLD:** N/A **VAPOR DENSITY:** N/A

PH: N/A **MELTING POINT/FREEZING POINT:** N/A

SOLUBILITY(IES): N/A **INITIAL BOILING POINT AND BOILING RANGE:** N/**A**

PARTITION COEFFICIENT N-OCTANOL/WATER: N/A

FLASH POINT: N/A **AUTO-IGNITION TEMPERATURE:** N/A

EVAPORATION RATE: N/A **DECOMPOSITION TEMPERATURE:** N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY: **CONDITION TO AVOID:** DISPERSING DUST IN AIR, ABOVE MEC, AND EXPOSURE TO POTENTIAL IGNITION SOURCES **STABLE:** X

INCOMPATIBILITY (MATERIALS TO AVOID): NONE KNOWN

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: CO2 H2S AND OXYGEN DEFICIENT ATMOSPHERE UNDER IMPROPER STORAGE CONDITIONS.

HAZARDOUS POLYMERIZATION: CONDITION TO AVOID: N/A
WILL NOT OCCUR: X

REACTIVITY:

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: INHALATION: X **SKIN:** X **EYES:** X **INGESTION:** UNLIKELY
CARCINOGENICITY: NTP: NO **ARC MONOGRAPHS:** NO **OSHA REGULATED:** NO

ACUTE: MAY BE MECHANICAL IRRITANT TO SKIN AND EYES. EXCESSIVE INHALATION OF GRAIN DUSTS MAY AFFECT THE NOSE, THROAT, AND LUNGS.

CHRONIC: REPEATED AND PROLONGED EXPOSURE TO GRAIN DUSTS MAY AFFECT THE RESPIRATORY SYSTEM OR CAUSE SENSITIZATION. SMOKERS HAVE AN INCREASED RISK OF RESPIRATORY EFFECTS.

SIGNS AND SYMPTOMS OF EXPOSURE: IRRITATION TO THE SKIN, EYES, NOSE OR THROAT MAY OCCUR. SOME PEOPLE MAY OCCASIONALLY EXPERIENCE COUGHING.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ALLERGIES AND RESPIRATORY AILMENTS.

SECTION 12: ECOLOGICAL INFORMATION: (NON-MANDATORY)

SECTION 13: DISPOSAL CONSIDERATIONS: (NON-MANDATORY)

SECTION 14: TRANSPORT INFORMATION: (NON-MANDATORY)

SECTION 15: REGULATORY INFORMATION: (NON-MANDATORY)

ALL ELECTRICAL EQUIPMENT MUST BE SUITABLE FOR USE IN HAZARDOUS ATMOSPHERES INVOLVING COMBUSTIBLE DUST IN ACCORDANCE WITH 29 CFR 1910.307. THE NATIONAL ELECTRICAL CODE, NFPA 70, CONTAINS GUIDELINES FOR DETERMINING THE TYPE AND DESIGN OF EQUIPMENT AND INSTALLATION, WHICH WILL MEET THIS REQUIREMENT.

COMBUSTIBLE DUST IS A "HAZARD, OTHER THAN CHEMICAL" AS DEFINED BY THE OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

THIS SAFETY DATA SHEET COVERS GRAIN IN ITS NATURAL STATE AND DOES NOT INCLUDE CHEMICALS THAT MAY BE APPLIED BY SUBSEQUENT HANDLERS AND/OR DISTRIBUTORS OF THIS PRODUCT. THE INFORMATION IN THIS SDS WAS OBTAINED FROM SOURCES THAT WE BELIEVE ARE RELIABLE; HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OR CORRECTNESS. THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE, OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE, OR DISPOSAL OF THIS PRODUCT.

APPENDIX D: Generic Safety Data Sheet for Feed

SECTION 1: IDENTIFICATION	
PRODUCT NAME:	**FEEDS**
SDS NUMBER:	FEED
SYNONYMS/OTHER MEANS OF IDENTIFICATION:	
INTENDED USE:	FEED AND OTHER
MANUFACTURER:	VARIOUS
EMERGENCY HEALTH AND SAFETY NUMBER:	
SDS INFORMATION:	PHONE: E-MAIL: URL:

SECTION 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION: ORGANIC DUST

LABEL ELEMENTS:
SIGNAL WORD: N/A DUE TO FDA LABELING EXEMPTION

HAZARD STATEMENT(S):
CLASS 2B EYE IRRITANT.
MAY CAUSE BREATHING DIFFICULTIES IF INHALED.
MAY CREATE A FLASH FIRE OR EXPLOSION HAZARD IF DUST OF CERTAIN PARTICLE SIZE IS SUSPENDED IN AIR AT SUFFICIENT CONCENTRATION IN A CONFINED SPACE AND EXPOSED TO AN IGNITION SOURCE.

PRECAUTIONARY STATEMENT(S):
MAY BE MECHANICAL EYE IRRITANT. RINSE EYES WITH WATER FOR SEVERAL MINUTES.
AVOID BREATHING DUST. EXCESSIVE INHALATION MAY AFFECT NOSE THROAT, AND LUNGS.
FEED DUST MAY BURN IF SUSPENDED IN AIR AND MAY CREATE A FLASH FIRE/ EXPLOSION HAZARD. AVOID IGNITION SOURCES.

EMERGENCY OVERVIEW: MAY BE MECHANICAL IRRITANT TO EYES. EXCESSIVE INHALATION OF FEED DUSTS MAY AFFECT NOSE THROAT, AND LUNGS. MAY FORM COMBUSTIBLE DUST CONCENTRATION IN AIR; SEE "EXPLOSION HAZARD" BELOW.

EXPLOSION HAZARD: FEED IS GENERALLY CONSIDERED NOT HAZARDOUS, BUT DUST GENERATED THROUGH DOWNSTREAM ACTIVITIES THAT MAY REDUCE ITS PARTICLE SIZE (E.G., SHIPPING, HANDLING, TRANSFER TO BINS, ETC.) MAY CREATE A HAZARDOUS CONDITION.

IF EXPOSED TO AN IGNITION SOURCE, FEED DUST MAY BURN. AIRBORNE DUST IN SUFFICIENT CONCENTRATIONS WHEN EXPOSED TO AN IGNITION SOURCE MAY FLASH OR, IN A CONFINED SITUATION, MAY FUEL AN EXPLOSION.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS		
COMPONENT	**CASRN**	**CONCENTRATION**
DUST FROM PREPARED ANIMAL FEEDS (GRAINS, PLANT AND/OR ANIMAL PROTEINS, VITAMINS AND MINERALS)		100%

SECTION 4: FIRST-AID MEASURES

INHALATION:
REMOVE PERSON FROM EXPOSURE. SEEK MEDICAL ATTENTION FOR ANY BREATHING DIFFICULTY.
INGESTION:
IF SWALLOWED, GIVE SEVERAL GLASSES OF WATER TO DILUTE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
SKIN CONTACT:
WASH AFFECTED SKIN WITH SOAP AND WATER.
EYE CONTACT:
FLUSH EYES WITH WATER. SEEK MEDICAL ATTENTION AS NEEDED.

SECTION 5: FIRE FIGHTING MEASURES

HAZARDOUS COMBUSTION PRODUCTS: OXIDES OF CARBON

SPECIAL FIRE FIGHTING PROCEDURES: EXTINGUISH WITH WATER FOG, DRY CHEMICAL POWDERS OR FOAM. DO NOT USE STRONG STREAMS OF WATER OR DRY CHEMICAL IF DUST CAN BE DISPERSED INTO THE AIR. DUST PLACED IN SUSPENSION WITH AN IGNITION SOURCES PRESENT MAY FLASH OR EXPLODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: EXPLOSION HAZARD MAY EXIST FOR COMBUSTIBLE DUSTS OF CERTAIN PARTICLE SIZE AND MOISTURE CONTENT WHEN SUSPENDED IN AIR AT CERTAIN CONCENTRATIONS AND SUBJECTED TO AN IGNITION SOURCE.

SECTION 6: ACCIDENTAL RELEASE MEASURES

CLEAN UP WITH SOFT BRISTLE BROOM(S) OR A VACUUM APPROVED FOR A CLASS II HAZARDOUS LOCATION. DUST DEPOSITS SHOULD BE MAINTAINED TO A MINIMUM ON SURFACES, AS THESE COULD FORM AN EXPLOSIVE MIXTURE IF THEY ARE RELEASED INTO THE ATMOSPHERE IN SUFFICIENT CONCENTRATION. AVOID DISPERSAL OF DUST IN THE AIR (I.E., CLEANING DUST SURFACES WITH COMPRESSED AIR IN THE PRESENCE OF IGNITION SOURCE SHOULD NOT BE ALLOWED). NON-SPARKING TOOLS SHOULD BE USED.

SECTION 7: HANDLING AND STORAGE

AVOID DISPENSING DUST IN AIR AND EXPOSURE TO POTENTIAL IGNITION SOURCES. REMOVE FEED DUST FROM AREA/PROCESSING EQUIPMENT PRIOR TO USING ANY HEAT PRODUCING EQUIPMENT SUCH AS ARC WELDERS, CUTTING TORCHES AND SPARK/HEAT PRODUCING TOOLS SUCH AS PORTABLE SURFACE GRINDERS.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: MAY CAUSE IRRITATION OF THE NASAL MEMBRANES OR THE UPPER RESPIRATORY TRACT. IF DUST EXCEEDS THE NUISANCE LEVEL. WEAR AN APPROVED NIOSH DUST RESPIRATOR WHENEVER DUST CONCENTRATIONS IN THE WORK AREA ARE ABOVE ACGIH TLV/OSHA PELS.

VENTILATION: LOCAL EXHAUST: IF NEEDED

MECHANICAL (GENERAL): IF NEEDED

ENSURE THAT DUST HANDLING SYSTEMS (SUCH AS EXHAUST DUCTS, DUST COLLECTORS, VESSELS, AND PROCESSING EQUIPMENT) ARE DESIGNED IN A MANNER TO PREVENT THE ESCAPE OF DUST INTO THE WORK AREAS. USE ONLY APPROPRIATELY CLASSIFIED ELECTRICAL EQUIPMENT AND POWERED INDUSTRIAL TRUCKS.

PROTECTIVE GLOVES: N/A

EYE PROTECTION: SAFETY GLASSES / GOGGLES SUGGESTED IN DUSTY CONDITIONS

WORK/ HYGIENIC PRACTICES: GOOD PERSONAL HYGIENE PRACTICES SHOULD BE FOLLOWED. WASH HANDS AND FACE BEFORE EATING, DRINKING, ETC.

AVOID DUST ACCUMULATION AND CONTROL IGNITION SOURCES. WHERE APPROPRIATE, EMPLOY GROUNDING, VENTING, AND EXPLOSION RELIEF PROVISIONS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES IN PROCESSES CAPABLE OF GENERATING DUST AND/OR STATIC ELECTRICITY. AVOID ACCUMULATION OF DUST ON SURFACES TO PREVENT SECONDARY DUST EXPLOSIONS. REFER TO APPROPRIATE OSHA, NFPA AND APPLICABLE STANDARDS.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

FLASH POINT (METHOD): N/A
FLAMMABLE LIMITS: **LEL:** VARIABLE **UEL:** UNKNOWN
AUTOIGNITION TEMPERATURE: UNKNOWN

APPEARANCE: TAN TO DARK BROWN IN APPEARANCE WITH PERHAPS A SWEET ODOR
SOLID CONTENTS: 100%

SECTION 10: STABILITY AND REACTIVITY

STABILITY: **UNSTABLE:** **CONDITION TO AVOID:** N/A
STABLE: X

INCOMPATIBILITY (MATERIALS TO AVOID): NONE KNOWN

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: NONE KNOWN

HAZARDOUS POLYMERIZATION: MAY OCCUR: **CONDITION TO AVOID:** N/A
WILL NOT OCCUR: X

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: **INHALATION:** X **SKIN:** X **EYES:** X **INGESTION:** UNLIKELY
CARCINOGENICITY: **NTP:** NO **ARC MONOGRAPHS:** NO **OSHA REGULATED:** NO

ACUTE: MAY BE MECHANICAL IRRITANT TO SKIN AND EYES. EXCESSIVE INHALATION OF FEED DUSTS MAY AFFECT THE NOSE, THROAT, AND LUNGS.

CHRONIC: REPEATED AND PROLONGED INHALATION OF FEED DUSTS MAY AFFECT THE RESPIRATORY SYSTEM. SMOKERS HAVE AN INCREASED RISK OF RESPIRATORY EFFECTS.

SIGNS AND SYMPTOMS OF EXPOSURE: IRRITATION TO THE SKIN, EYES, NOSE OR THROAT MAY OCCUR. SOME PEOPLE MAY OCCASIONALLY EXPERIENCE COUGHING.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: ALLERGIES AND RESPIRATORY AILMENTS.

SECTION 12: ECOLOGICAL INFORMATION: (NON-MANDATORY)

SECTION 13: DISPOSAL CONSIDERATIONS: (NON-MANDATORY)

SECTION 14: TRANSPORT INFORMATION: (NON-MANDATORY)

SECTION 15: REGULATORY INFORMATION: (NON-MANDATORY)

SECTION (B)(5)(III) OF THE HCS (CFR 1910.1200) EXEMPTS FOOD, INCLUDING FEED AND THEREFORE ANY ASSOCIATED FEED DUST, FROM THE LABELING REQUIREMENTS OF THE HCS SINCE THE FOOD/FEED IS SUBJECT TO THE LABELING REQUIREMENTS OF THE FOOD & DRUG ADMINISTRATION.

SECTION 16: OTHER INFORMATION

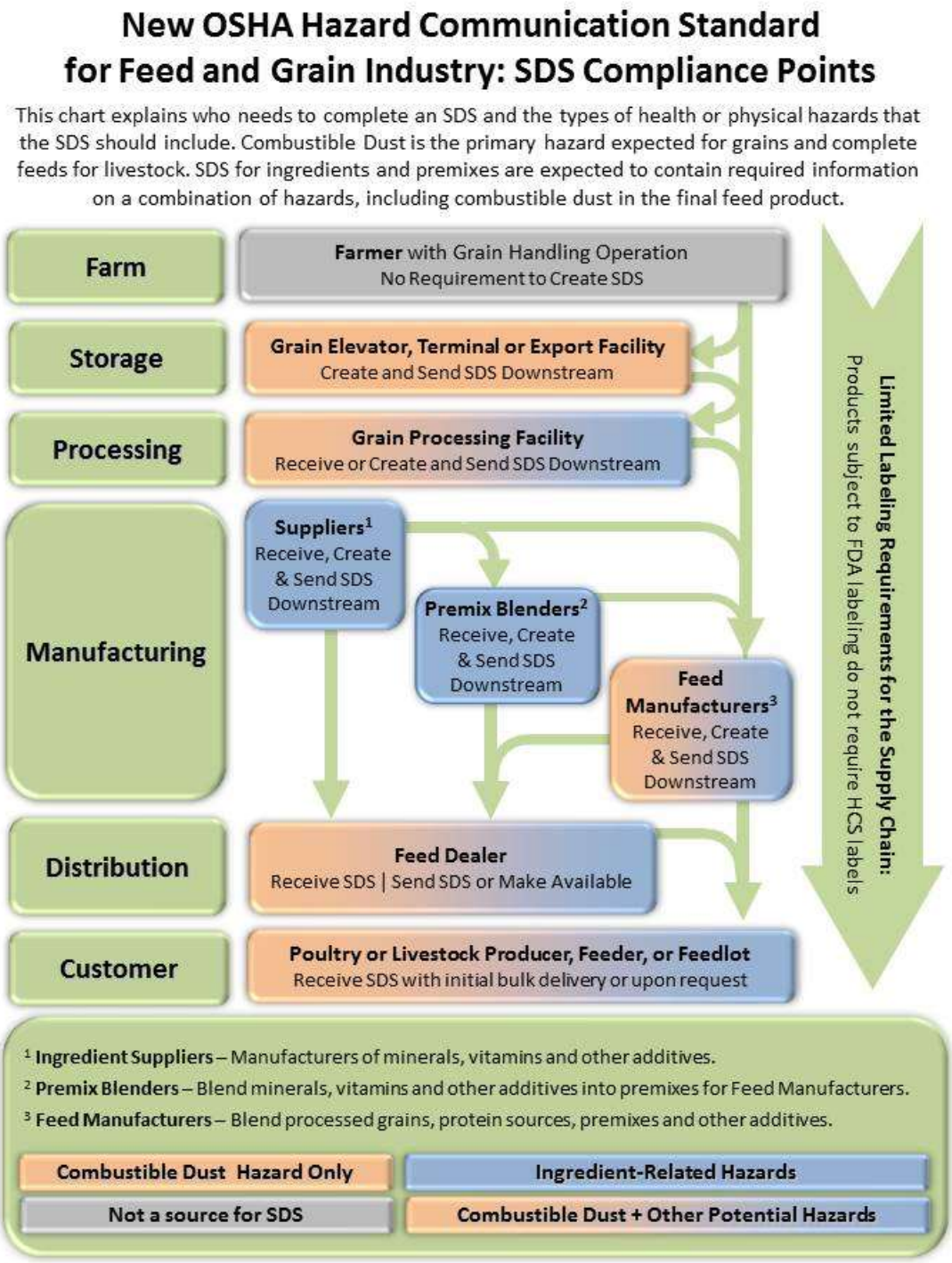
ANIMAL FEED IS COMPRISED OF WHOLE AND PROCESSED GRAINS AND MAY CONTAIN ADDED VITAMINS AND MINERALS. FEED COMPONENTS GENERALLY PRODUCE A LIMITED AMOUNT OF DUST IN MANUFACTURING AND HANDLING OF THE MATERIAL.

THIS SDS IS GENERIC AND MAY NOT APPLY TO ALL FEED FORMULATIONS. FOR EXAMPLE, FEED WITH CERTAIN ADDED MEDICATIONS PREMIXES, VITAMIN AND MINERAL SUPPLEMENTS MAY CONTAIN INGREDIENTS THAT RESULT IN DIFFERENT OR ADDITIONAL HAZARDS, MAY REQUIRE ADDITIONAL ACCIDENTAL RELEASE MEASURES, MAY HAVE DIFFERING TOXICOLOGICAL EXPOSURES AND/OR MAY REQUIRE ADDITIONAL EXPOSURE CONTROLS AND PERSONAL PROTECTION. THE MANUFACTURER IS ENCOURAGED TO EVALUATE EACH FEED FORMULATION TO DETERMINE IF THIS GENERIC SDS IS APPROPRIATE.

THIS GENERIC SDS IS NOT INTENDED TO SUGGEST THAT A SDS IS REQUIRED FOR ALL FEED DUST IN ALL CIRCUMSTANCES. THE MANUFACTURER OR IMPORTER SHOULD MAKE ITS OWN INTERPRETATION OF OSHA'S HCS, INCLUDING THE EXEMPTIONS IN THE STANDARD, FOR ITS SPECIFIC PRODUCT. SOME MANUFACTURERS OR IMPORTERS MAY ALSO PRODUCE A SDS FOR FEED DUST EVEN IF SUCH A SDS IS NOT REQUIRED BY OSHA'S HCS. THIS GENERIC SDS MAY BE USEFUL FOR THOSE MANUFACTURERS OR IMPORTERS.

IN ACCORDANCE WITH OSHA'S HAZARD COMMUNICATION STANDARD (HCS) ALL MATERIALS: 1) WHICH CONSTITUTE 1 % OR MORE OF THIS PRODUCT AND MEET THE STANDARD'S DEFINITION OF HAZARDOUS MATERIALS, 2) THAT CONSTITUTE 0.1% OR MORE AND MEET THE STANDARD'S DEFINITION OF CARCINOGENS, AND OR 3) THAT COULD BE RELEASED FROM THE PRODUCT IN EXCESS OF ESTABLISHED LIMITS SHOULD BE LISTED AND MAY REQUIRE A SPECIFIC SDS.

APPENDIX E: SDS Compliance Points for the Grain, Feed, Processing and Milling Industries



APPENDIX F: Notification of Contractors Concerning Hazardous Chemicals

Contractors whose employees may be exposed to hazardous chemicals at this facility will be informed of the hazards associated with such chemicals before they begin work. Contractors also are to notify the company about any hazardous materials they plan to bring on site prior to their use.

The following procedures will be utilized:

1. Appropriate safety data sheets will be made available to contractors by the following method(s):

2. Precautionary measures the contractor's employees should observe will be communicated by the following method(s):

3. The procedures for labeling hazardous chemicals and any applicable alternative labeling procedures will be communicated by the following method(s):

APPENDIX G: Material Safety Data Sheets for Wheat, Oat and Barley, and Other Dusts

This is a sample only; it will be replaced by the new format in Appendices C and D on June 1, 2015

Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As used on Label and List)*	***Note:*** *Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.*
Dust from wheat, oats or barley	

Section I

Manufacturer's Name	Emergency Telephone Number
Address *(Number, Street, City, State and Zip Code)*	Telephone Number for Information
	Date Prepared
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name[s])	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
None known	*10 mg/m³*	*4 mg/m³**	*None*	

** This TLV applies only to dust from wheat, oats and barley.*
The grain industry believes there is currently inadequate data to support this TLV.

Section III — Physical/Chemical Characteristics

Boiling Point	*N/A*	Specific Gravity (H_2O=1)	*N/A*
Vapor Pressure (mm Hg.)	*N/A*	Melting Point	*N/A*
Vapor Density (AIR=1)	*N/A*	Evaporation Rate (Butyl Acetate=1)	*N/A*

Solubility in Water
N/A

Appearance and Odor
Light greyish brown, normally odorless.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	*N/A*	*55 gm/m³*	*Unknown*

Extinguishing Media
Form CO_2, dry chemical or water fog.

Special Fire Fighting Procedures
Do not use direct hose stream if dust can be dispersed into air.
Dust dispersed by water stream in the presence of an ignition source could cause an explosion.

Unusual Fire and Explosion Hazards
If improperly handled, stored and/or exposed to an ignition source, this material may burn.
Airborne dust in sufficient concentrations, when confined and exposed to a sufficient ignition source, can explode.

(Reproduce locally) **GEAPS *In-Grain* • April 1989** OSHA 174, Sept. 1985