



# CHEM INTERNATIONAL

CHEM INTERNATIONAL INC  
P.O. Box 5501  
Greenville, SC 29606  
864-458-7868

## SOY AMINE, DISTILLED CHEM INTERNATIONAL, INC.

Safety Data Sheet

Document Date: 10/9/2018

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### Product Identifier

<b>Product name</b>	Soy Amine, distilled
<b>Chemical Name</b>	soya alkylamines
<b>Synonyms</b>	(soya alkyl)amine, amines, soya alkyl, asphalt emulsifier, corrosion inhibitor, ore flotation aid, soyamine
<b>Proper shipping name</b>	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains soya amines)
<b>Other means of identification</b>	Not Available
<b>CAS number</b>	61790-18-9

#### Relevant identified uses of the substance or mixture and uses advised against

<b>Relevant identified uses</b>	The Fatty Nitrogen Derived (FND) ether amines and FND amines have surfactant properties (e.g. comprised of hydrophobic and hydrophilic ends, form micelles, alter/reduce surface tension, form oil/water emulsions), and are used as additives and in the production of commercial surfactants such as ethoxylated ether amine surfactants. Some typical applications of FND Ether Amines are collectors for flotation process, additives for fuels, lubricants, and petroleum refining, corrosion inhibitors for metalworking fluids, chemical intermediates, textile chemical foaming agents, specialty surfactants, ethoxylates, agricultural chemicals, and cross linking agents for epoxy resins. Based on an analysis of data across the FND chemicals, the chain length and degree of unsaturation in the FND surfactants does not appear to have a significant impact on fate and effects. Ore flotation; asphalt emulsifier; corrosion inhibitor; petroleum product additive [~Surfactant ~]
---------------------------------	---

#### Details of the supplier of the safety data sheet

<b>Registered company name</b>	CHEM INTERNATIONAL, INC.
<b>Address</b>	6099 Ponders Court, Greenville SC 29615
<b>Telephone</b>	(864) 458-7868
<b>Fax</b>	(864) 458-7783
<b>Website</b>	www.chem-international.com

#### Emergency telephone number

<b>Association / Organization</b>	CHEMTREC
<b>Emergency telephone numbers</b>	800-424-9300 (inside U.S. and Canada)

### SECTION 2 HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

<b>Classification</b>	Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 5, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
-----------------------	--

**Label elements**

<b>GHS label elements</b>	
---------------------------	---

**SIGNAL WORD** **DANGER**

**Hazard statement(s)**

- H290** May be corrosive to metals.
- H302** Harmful if swallowed.
- H333** May be harmful if inhaled
- H314** Causes severe skin burns and eye damage.
- H410** Very toxic to aquatic life with long lasting effects.

**Precautionary statement(s) Prevention**

- P260** Do not breathe dust/fume/gas/mist/vapors/spray.
- P280** Wear protective gloves/protective clothing/eye protection/face protection.
- P234** Keep only in original container.
- P270** Do not eat, drink or smoke when using this product.
- P273** Avoid release to the environment.

**Precautionary statement(s) Response**

- P301+P330+P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310** Immediately call a POISON CENTER/doctor/physician/first aider.
- P363** Wash contaminated clothing before reuse.
- P304+P312** IF INHALED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
- P390** Absorb spillage to prevent material damage.
- P391** Collect spillage.
- P301+P312** IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
- P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Precautionary statement(s) Storage**

- P405** Store locked up.

**Precautionary statement(s) Disposal**

- P501** Dispose of contents/container in accordance with local regulations.

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

CAS No	%[weight]	Name	Classification
61790-18-9	>90	<u>soyaamines</u>	Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 5, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1; H290, H302, H333, H314, H410

**Mixtures**

See section above for composition of Substances

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
<b>Skin Contact</b>	If skin or hair contact occurs: Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. Transport to hospital, or doctor.

- If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested.
  - Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor. Inhalation of vapors or aerosols (mists, fumes) may cause lung oedema. Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- Inhalation**
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. **This must definitely be left to a doctor or person authorized by him/her.** (ICSC13719)
  - For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed.
  - **If swallowed do NOT induce vomiting.** If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.
- Ingestion**

#### Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- Oxygen is given as indicated.
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilization of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

#### INGESTION:

- Milk and water are the preferred diluents  
No more than 2 glasses of water should be given to an adult.
- Neutralizing agents should never be given since exothermic heat reaction may compound injury.
  - \* Catharsis and emesis are absolutely contra-indicated.
  - \* Activated charcoal does not absorb alkali.
  - \* Gastric lavage should not be used.
- Supportive care involves the following:
  - Withhold oral feedings initially.
  - If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
  - Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
  - Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

#### SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.  
Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### Special hazards arising from the substrate or mixture

**Fire Incompatibility** Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result

### Advice for firefighters

- Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course. Use fire fighting procedures suitable for surrounding area. **Do not approach containers suspected to be hot.** Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.

**Fire/Explosion Hazard** Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (Nox), other pyrolysis products typical of burning organic material. May emit corrosive fumes.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up**

- Clean up all spills immediately. Avoid breathing vapors/ aerosols/ or dusts and avoid contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Place in a suitable, labelled container for waste disposal. Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. Check regularly for spills and leaks.
- Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place). Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralize/decontaminate residue (see Section 13 for specific agent). Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 HANDLING AND STORAGE****Precautions for safe handling**

- Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid contact with incompatible materials. **When handling, DO NOT eat, drink or smoke.** Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS. **DO NOT store near acids, or oxidizing agents** No smoking, naked lights, heat or ignition sources.

**Conditions for safe storage, including any incompatibilities**

- **Suitable container** For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.): Removable head packaging; Cans with friction closures and low pressure tubes and cartridges may be used.  
- Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
- **Storage incompatibility** Avoid contact with copper, aluminum and their alloys. Avoid strong acids, acid chlorides, acid anhydrides and hloroformates. Avoid reaction with oxidizing agents

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Control parameters****OCCUPATIONAL EXPOSURE LIMITS (OEL)****INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
SOYA ALKYLAMINES	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
soya alkylamines	Not Available	Not Available

**MATERIAL DATA**

No exposure limits set by NOHSC or ACGIH

**Exposure controls**

- **Appropriate engineering controls** Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work

environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapors, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favorable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

#### Personal protection



- Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

#### Eye and face protection

See Hand protection below

#### Skin protection

- Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber
- NOTE:** The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as they cannot be adequately decontaminated

#### Hands/feet protection

#### Body protection

See Other protection below

#### Other protection

Overalls. PVC Apron. PVC protective suit may be required if exposure severe. Eyewash unit. Ensure there is ready access to a safety shower.

#### Thermal hazards

Not Available

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Appearance** Family of products which vary in their physical properties as a result of variations in production. Data presented here is for typical family member. |Yellow liquid with ammoniacal odor; does not mix well with water.

**Physical state** Non Slump Paste

**Odor** Not Available

**Odor threshold** Not Available

**Relative density (Water = 1)** 0.85 (approx)

**Partition coefficient n-octanol / water** Not Available

**Auto-ignition temperature (°C)** Not Available

<b>pH (as supplied)</b>	Not Applicable
<b>Melting point / freezing point (°C)</b>	30-40
<b>Initial boiling point and boiling range (°C)</b>	Not Available
<b>Flash point (°C)</b>	>150
<b>Evaporation rate</b>	<1 BuAC = 1
<b>Flammability</b>	Not Applicable
<b>Upper Explosive Limit (%)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available
<b>Vapor pressure (kPa)</b>	<0.1
<b>Solubility in water (g/L)</b>	Miscible
<b>Vapor density (Air = 1)</b>	Not Available

<b>Decomposition temperature</b>	Not Available
<b>Viscosity (cSt)</b>	46.3 SSU (35 C)
<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Taste</b>	Not Available
<b>Explosive properties</b>	Not Available
<b>Oxidizing properties</b>	Not Available
<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Volatile Component (%vol)</b>	Not Available
<b>Gas group</b>	Not Available
<b>pH as a solution (1%)</b>	Not Available
<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerization will not occur.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

<b>Inhaled</b>	Inhalation of vapors may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. Inhalation of amine vapors may cause irritation of the mucous membranes of the nose and throat and lung irritation with respiratory distress and cough. Single exposures to near lethal concentrations and repeated exposures to sublethal concentrations produces tracheitis, bronchitis, pneumonitis and pulmonary oedema. Aliphatic and alicyclic amines are generally well absorbed from the respiratory tract. Systemic effects include headache, nausea, faintness and anxiety. These effects are thought to be transient and are probably related to the pharmacodynamic action of the amines. Histamine release by aliphatic amines may produce bronchoconstriction and wheezing.
<b>Ingestion</b>	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Aliphatic and alicyclic amines are generally well absorbed from the gut. Corrosive action may cause tissue damage throughout the gastrointestinal tract. Detoxification is thought to occur in the liver, kidney and intestinal mucosa with the enzymes, monoamine oxidase and diamine oxidase (histaminase) having a significant role.
<b>Skin Contact</b>	The material can produce chemical burns following direct contact with the skin. Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Volatile amine vapors produce primary skin irritation and dermatitis. Direct local contact, with the lower molecular weight liquids, may produce skin burns. Percutaneous absorption of simple aliphatic amines is known to produce lethal effects often the same as that for oral administration. Cutaneous sensitization has been recorded chiefly due to ethyleneamines. Histamine release following exposure to many aliphatic amines may result in "triple response" (white vasoconstriction, red flare and wheal) in human skin. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	The material can produce chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating. When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation. Vapors of volatile amines cause eye irritation with lachrymation, conjunctivitis and minor transient corneal oedema which results in "halos" around lights (glauropsia, "blue haze", or "blue-grey haze"). Vision may become misty and halos may appear several hours after workers are exposed to the substance. This effect generally disappears spontaneously within a few hours of the end of exposure, and does not produce physiological after-effects. However oedema of the corneal epithelium, which is primarily responsible for vision disturbances, may take more than one or more days to clear, depending on the severity of exposure. Photophobia and discomfort from the roughness of the corneal surface also may occur after greater exposures. Although no detriment to the eye occurs as such, glauropsia predisposes an affected individual to physical accidents and reduces the ability to undertake skilled tasks such as driving a vehicle. Direct local contact with the liquid may produce eye damage which may be permanent in the case of the lower molecular weight species.
<b>Chronic</b>	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the

mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitization reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

soya alkylamines	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 1950[2]	Not Available

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

#### SOYA ALKYLAMINES

For Fatty Nitrogen-Derived ether amines and Fatty Nitrogen-derived amines (FND ether amines and FND amines): FND ether amines and FND amines are very similar in structure and function. . The minimal difference among the alkyl substituents and the large database for the FND categories indicates that the structural differences in these large alkyl chains do not result in differences in toxicity or mutagenicity. The differences in chain length, degree of saturation of the carbon chains, source of the natural oils, or addition of an amino group in the chain would not be expected to have an impact on the toxicity profile. This conclusion is supported by a number of studies in the FND family of chemicals (amines, cationics, and amides as separate categories) that show no differences in the length or degree of saturation of the alkyl substituents and is also supported by the limited toxicity of these long-chain substituted chemicals. The available acute oral LD50 study for the propanamine derivative with the extensive data for the other supporting chemicals provides adequate evidence that the FND ether amines are only moderately to slightly toxic via this route and exposure period. Acute dermal studies for the supporting chemicals indicate these chemicals can be classified as minimally toxic. Acute inhalation studies did not result in deaths under normal exposure conditions for two chemicals. Repeated dose toxicity studies had similar NOAELs (12.5 to 50 mg/kg/day for rats and 3 or 13 mg/kg/day for dogs). Importantly because the highest exposure potential for some of the FND ether amines is via skin contact, a number of repeat dose dermal studies indicate the chemicals are highly irritating. No clear organ-specific toxicity occurred in any of the repeat dose studies with the supporting chemicals in the FND ether amines category. In addition, available data indicate that the FND ether amines are unlikely to be mutagenic and that they are not reproductive or developmental toxins. In evaluating potential toxicity of the FND Amines chemicals, it is also useful to review the available data for the related FND Cationic and FND Amides Category chemicals. Acute oral toxicity studies (approximately 80 studies for 40 chemicals in the three categories) provide LD50 values from approximately 400 to 10,000 mg/kg with no apparent organ specific toxicity. Similarly, repeated dose toxicity studies (approximately 35 studies for 15 chemicals) provide NOAELs between 10 and 100 mg/kg/day for rats and slightly lower for dogs. More than 60 genetic toxicity studies (*in vitro* bacterial and mammalian cells as well as *in vivo* studies) indicated no mutagenic activity among more than 30 chemicals tested. For reproductive evaluations, 14 studies evaluated reproductive endpoints and/or reproductive organs for 11 chemicals, and 15 studies evaluated developmental toxicity for 13 chemicals indicating no reproductive or developmental effects for the FND group as a whole. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterized by dyspnea, cough and mucus production.

\*

**Acute Toxicity**  
**Skin Irritation/Corrosion**  
**Serious Eye Damage/Irritation**  
**Respiratory or Skin sensitization**  
**Mutagenicity**

**Carcinogenicity**  
**Reproductivity**  
**STOT - Single Exposure**  
**STOT - Repeated Exposure**  
**Aspiration Hazard**

**Legend:**

- Data available but does not fill the criteria for classification
- Data available to make classification
- Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
------------	----------	--------------------	---------	-------	--------

<b>Not Available</b>	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Very toxic to aquatic organisms. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites. For surfactants: Environmental fate: Octanol/water partition coefficients cannot easily be determined for surfactants because one part of the molecule is hydrophilic and the other part is hydrophobic. Consequently they tend to accumulate at the interface and are not extracted into one or other of the liquid phases. As a result surfactants are expected to transfer slowly, for example, from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolized rapidly during the process of bioaccumulation. This was emphasized by the OECD Expert Group stating that chemicals are not to be considered to show bioaccumulation potential if they are readily biodegradable. Several anionic and nonionic surfactants have been investigated to evaluate their potential to bioconcentrate in fish. BCF values (BCF - bioconcentration factor) ranging from 1 to 350 were found. These are absolute maximum values, resulting from the radiolabelling technique used. In all these studies, substantial oxidative metabolism was found resulting in the highest radioactivity in the gall bladder. This indicates liver transformation of the parent compound and biliary excretion of the metabolized compounds, so that "real" bioconcentration is overstated. After correction it can be expected that "real" parent BCF values are one order of magnitude less than those indicated above, i.e. "real" BCF is <100. Therefore the usual data used for classification by EU directives to determine whether a substance is "Dangerous to the Environment" has little bearing on whether the use of the surfactant is environmentally acceptable. Ecotoxicity: Surfactant should be considered to be toxic (EC50 and LC50 values of < 10 mg/L) to aquatic species under conditions that allow contact of the chemicals with the organisms. The water solubility of the chemicals does not impact the toxicity except as it relates to the ability to conduct tests appropriately to obtain exposure of the test species. The acute aquatic toxicity generally is considered to be related to the effects of the surfactant properties on the organism and not to direct chemical toxicity. Prevent, by any means available, spillage from entering drains or water courses. **DO NOT discharge into sewer or waterways.** For Fatty Nitrogen-derived ether amines and Fatty Nitrogen-Derived amines (FND ether amines and FND amines):

**Environmental fate:** Consistent with the size and nature of these molecules, measured and modeled vapor pressures are very low, and the FND ether amines are considered to be essentially nonvolatile. Measurement and prediction of physical/chemical properties for surfactants are complicated by their behavior in test systems and the environment, and the log Kow is not an appropriate hydrophobicity parameter for reliably predicting environmental behavior. Prediction of physical/chemical properties, including strong adsorption and absorption properties (log Koc) and surface tension activity is unreliable for the same reasons. Water solubility estimates varied from slightly soluble to very insoluble. Fugacity models predict virtually no occurrence of the FND ether amines in air, which is consistent with the very low vapor pressures. Nonetheless, modeling indicates that they would be expected to degrade relatively rapidly upon exposure to light (t1/2 values ranging from approximately 1.0 to 2.8 hours). Distribution to air and soil were < 1% for all of the chemicals that could be modeled while distribution to the water compartment varied from 5 to 90% with the remainder in the sediment. Overall, FND ether amines have been shown to be either readily biodegradable or to attain degradation close to meeting the "readily biodegradable" criteria.

**Ecotoxicity:** A number of studies evaluating the toxicity of the structurally related chemicals, to fish, have been reported. Three assays for one such chemical indicated substantial differences in the measured toxicity ranging from 23 to > 1000 mg/L. Again, this range shows the complexity of testing these types of chemicals. It is likely that the range of values represents bioavailability or physical availability (important because many surfactant-like chemicals are known to kill aquatic organisms via a physical rather than chemical mechanism) of the test chemical to the fish. Except where bioavailability questions arose, reported LC50 values ranged from 0.11 to 9.3 mg/L. These findings are consistent with the FND surfactants (cationics, amides, nitriles, ether nitriles) in general and support the conclusion that the FND chemicals are toxic to fish when bioavailable, presumably due to their surfactant properties. Similar to the fish testing, a series of studies evaluating toxicity to aquatic invertebrates is available for structurally related chemicals with EC50 values ranging between 0.011 and 21 mg/L, except where bioavailability questions arose. Acute toxicity to daphnia was confounded by solubility problems and yielded higher than expected EC50 values. In addition, a study examining a mixture of an FND active ingredient with inert materials (e.g. as used in soap) and using two water sources, indicated that river water reduced the toxicity compared to well water (EC50 = 60 vs 22 mg/L, respectively) and that the inert ingredients tended to reduce toxicity (EC50 = 6.5 mg/L for the 83.5% material vs 22 mg/L for the 63% material). Toxicity to aquatic plants for structurally related chemicals indicates that these amine surfactants are highly toxic to algae (EbC50 and ErC50 values ranging from 0.00075 to 0.17 mg/L). |Ecotoxicity:|for similar material.|Fish LC50 (96 h): minnows 0.11 mg/l|Daphnia magna EC50 (48 h): 0.011 mg/l|Algae EC50 (72 h): 0.03 mg/l|Biodegradability: 55% @28 days CBT; 72% @42 days CBT|Readily biodegradable.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

#### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

#### Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

### SECTION 13 DISPOSAL CONSIDERATIONS

#### Waste treatment methods

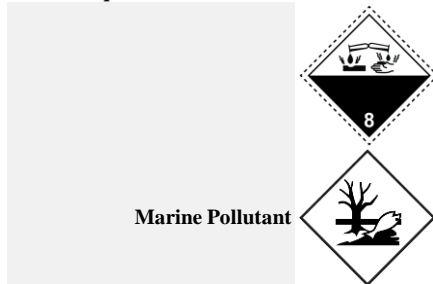
**Product / Packaging disposal** Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorized landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. **DO NOT allow wash water from cleaning or**



**process equipment to enter drains.** It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Treat and neutralize at an approved treatment plant. Treatment should involve: Mixing or slurring in water; Neutralization followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## SECTION 14 TRANSPORT INFORMATION

### Labels Required



### Land transport (UN)

<b>UN number</b>	2735	
<b>UN proper shipping name</b>	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains soya amines)	
<b>Transport hazard class(es)</b>	Class	8
	Subrisk	Not Applicable
<b>Packing group</b>	III	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	223; 274
	Limited quantity	5 L

### Air transport (ICAO-IATA / DGR)

<b>UN number</b>	2735	
<b>UN proper shipping name</b>	Amines, liquid, corrosive, n.o.s. *; Polyamines, liquid, corrosive, n.o.s. * (contains soya amines)	
<b>Transport hazard class(es)</b>	ICAO/IATA Class	8
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	8L
<b>Packing group</b>	III	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	A3A803
	Cargo Only Packing Instructions	856
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	852
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y841
Passenger and Cargo Limited Maximum Qty / Pack	1 L	

### Sea transport (IMDG-Code / GGVSee)

<b>UN number</b>	2735	
<b>UN proper shipping name</b>	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains soya amines)	
<b>Transport hazard class(es)</b>	IMDG Class	8
	IMDG Subrisk	Not Applicable
<b>Packing group</b>	III	
<b>Environmental hazard</b>	Marine Pollutant	

<b>Special precautions for user</b>	EMS Number	F-A, S-B
	Special provisions	223 274
	Limited Quantities	5 L

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15 REGULATORY INFORMATION****Safety, health and environmental regulations / legislation specific for the substance or mixture****SOYA ALKYLAMINES(61790-18-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- Not Applicable

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (soya alkylamines)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (soya alkylamines)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N (soya alkylamines)
USA - TSCA	Y

Y = All ingredients are on the inventory

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**Legend:****SECTION 16 OTHER INFORMATION****CONTACT POINT**

Disclaimer : While CHEM INTERNATIONAL, INC. endeavor to ensure that all advice given relating to the use and / or application of our products (whether in this leaflet or otherwise) is both correct and useful, the information is based partly on data made available to us from other sources and is not intended in a way to able to us from other sources and is not intended in a way to exhaustive or as a substitute for the customers own product testing, evaluation and safety procedures. If you have any queries over this suitability or safety precautions required for you particular application, please contact us and we will endeavor to assist you further.

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odor Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection OTV:

Odor Threshold Value BCF:

BioConcentration Factors BEI:

Biological Exposure Index