



1. Product and company identification

Product name	: INDULIN® AA-22
Synonym	: Not available.
Material uses	: Asphalt emulsifying agent
Manufacturer	: MeadWestvaco Corporation (www.mwv.com) Specialty Chemicals Division 5255 Virginia Avenue North Charleston, South Carolina USA 29406-3615
	email: msds@mwv.com
	Tel: +1 843 740 2236, +1 800 458 4034 (0800 - 1700 EST)
In case of emergency	: +1 800 424 9300 (USA) CHEMTREC



2. Hazards identification

Emergency overview

Physical state	: Liquid.
Color	: Amber. [Light]
Odor	: Pungent. Alcohol-like.
Signal word	: DANGER!
Hazard statements	: FLAMMABLE LIQUID AND VAPOR. CAUSES EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
Precautionary measures	: Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not get in eyes. Do not get on skin. Do not eat, drink or smoke when using this product. Avoid prolonged or repeated contact with skin. Keep away from heat, sparks and flame. Keep container tightly closed. Wash thoroughly after handling.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	: Severely irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	: Toxic if swallowed. May cause burns to mouth, throat and stomach.
Skin	: Corrosive to the skin. Causes burns. May cause sensitization by skin contact.
Eyes	: Corrosive to eyes. Causes burns.

Potential chronic health effects

Chronic effects	: Contains material that can cause target organ damage. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

2. Hazards identification

- Target organs** : Contains material which causes damage to the following organs: blood, mucous membranes, digestive system, upper respiratory tract, skin, eye, lens or cornea. Contains material which may cause damage to the following organs: the nervous system, liver, central nervous system (CNS).
- Over-exposure signs/symptoms**
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
- Ingestion** : Adverse symptoms may include the following:
stomach pains
- Skin** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Eyes** : Adverse symptoms may include the following:
pain
watering
redness
- Medical conditions aggravated by over-exposure** : Pre-existing skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Fatty quaternary ammonium salt ethanol	Proprietary 64-17-5	60-100 15-40

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. Fire-fighting measures

- Flammability of the product** : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Store under cool (<120°F), dry, well-ventilated warehouse conditions away from ignition sources.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and transfer the spilled material and absorbent to an appropriate waste disposal container. Dispose of waste according to applicable legislation.

6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
ethanol	<p>ACGIH TLV (United States, 2/2010). STEL: 1000 ppm 15 minute(s).</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 1000 ppm 8 hour(s). TWA: 1900 mg/m³ 8 hour(s).</p> <p>OSHA PEL (United States, 6/2010). TWA: 1000 ppm 8 hour(s). TWA: 1900 mg/m³ 8 hour(s).</p>

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

8. Exposure controls/personal protection

- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): neoprene , nitrile rubber
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: Safety glasses with side shields, safety goggles or face shield.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: Lab coat, apron or coveralls.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : Closed cup: 40°C (104°F) [Pensky-Martens.]
- Color** : Amber. [Light]
- Odor** : Pungent. Alcohol-like.
- pH** : 6 to 9 [Conc. (% w/w): 5%]
- Boiling/condensation point** : 82°C (179.6°F)
- Melting/freezing point** : <0°C (<32°F)
- Relative density** : 0.87
- Volatility** : 50% (w/w)
- Evaporation rate** : >1 (ether (anhydrous) = 1)

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Rat	7 g/kg	-

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-

Conclusion/Summary : Not available.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
Not available.			

Conclusion/Summary : Not available.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Mutagenicity

11. Toxicological information

Product/ingredient name	Test	Experiment	Result
Not available.			

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Not available.						

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Fatty quaternary ammonium salt	Acute LC50 100 to 117 ug/L Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 2 to 6 weeks	96 hours
ethanol	Acute EC50 17.921 mg/L Marine water Acute EC50 2000 ug/L Fresh water Acute LC50 25500 ug/L Marine water	Algae - Ulva pertusa Daphnia - Daphnia magna Crustaceans - Artemia franchiscana - Larvae	96 hours 48 hours 48 hours
	Acute LC50 42000 ug/L Fresh water Chronic NOEC 0.375 ul/L Fresh water	Fish - Oncorhynchus mykiss Fish - Gambusia holbrooki - Larvae - 3 days	4 days 12 weeks

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Not available.				

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001 - Exhibits the characteristic of Ignitability.










13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ethanol, Fatty quaternary ammonium salt). Marine pollutant (Fatty quaternary ammonium salt)	3 (8)	III	  	<p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: 5 L</p> <p>Cargo aircraft Quantity limitation: 60 L</p> <p>Special provisions B1, IB3, T7, TP1, TP28</p>
IMDG Class	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ethanol, Fatty quaternary ammonium salt). Marine pollutant (Fatty quaternary ammonium salt)	3 (8)	III	  	<p>Emergency schedules (EmS) F-E, S-C</p>
IATA-DGR Class	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ethanol, Fatty quaternary ammonium salt)	3 (8)	III	  	<p>Passenger and Cargo Aircraft Quantity limitation: 5 L Packaging instructions: 354</p> <p>Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 365</p> <p>Limited Quantities -</p>

14. Transport information

						Passenger Aircraft Quantity limitation: 1 L Packaging instructions: Y342
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PG* : Packing group

15. Regulatory information

HCS Classification : Flammable liquid
Toxic material
Corrosive material
Sensitizing material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: INDULIN® AA-22
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
INDULIN® AA-22: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: chloromethane

State regulations

Massachusetts : The following components are listed: ETHYL ALCOHOL
New York : None of the components are listed.
New Jersey : The following components are listed: ETHYL ALCOHOL; ALCOHOL
Pennsylvania : The following components are listed: DENATURED ALCOHOL

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
ethanol	Yes.	No.	No.	No.
chloromethane	No.	Yes.	No.	No.

International regulations

International lists : **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

Canada inventory : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

15. Regulatory information

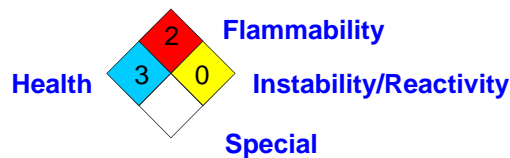
Chemical Weapons Convention List Schedule I Chemicals : Not listed
Chemical Weapons Convention List Schedule II Chemicals : Not listed
Chemical Weapons Convention List Schedule III Chemicals : Not listed

16. Other information

Label requirements : FLAMMABLE LIQUID AND VAPOR. CAUSES EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) : **National Fire Protection Association (U.S.A.)** :

Health	*	3
Flammability		2
Physical hazards		0



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Prepared by : MeadWestvaco Corporation - Product Stewardship Group

Indicates information that has changed from previously issued version.

Notice to reader

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