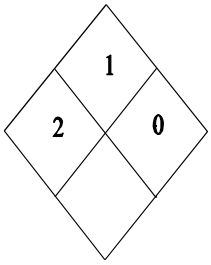
MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PRODUCT NAME: AMVAC AZTEC® 4.67 G
GENERAL USE: Insecticide
PRODUCT DESCRIPTION: Gray, tan or reddish granule with a slight onion-like odor
EPA Registration Number: 3125-513-5481; 264-811-5481
MSDS No.: 292_6D1
Current MSDS Revision Date: 19 October, 2005

MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
Ph: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Tebupirimfos; O-(2-(1,1-Dimethylethyl)-5-pyrimidinyl) O-ethyl O-(1-methylethyl) phosphorothioate); Bay Mat 7484	4.45%	96182-53-5
Cyfluthrin; Cyano(4-fluoro-3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; Baythroid	0.22%	68359-37-5
Other ingredients (Includes crystalline silica (quartz))	95.33% (0 - 10%)	 (14808-60-7)

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
Tebupirimfos	Poison	Not established	Not established
Cyfluthrin	Skin irritant	Not established	Not established
Crystalline silica(quartz)	Pulmonary fibrosis, silicosis	0.1 mg/m3 (respirable)	0.05 mg/m3 (respirable)

* Exposure Limits 8 hrs. TWA

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

WARNING! Contains an organophosphorus insecticide. Can be toxic by ingestion. May cause skin and eye irritation. Keep away from food, pets, and children.

Product is toxic to fish and wildlife. Keep out of water sources.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Inhalation; skin contact; skin absorption; eye contact.

SIGNS OF ACUTE OVEREXPOSURE: Inhalation, dermal absorption or ingestion of the organophosphate insecticide contained in this formulation may result in systemic intoxication due to inhibition of the enzyme cholinesterase. The sequence of development of systemic effects varies with the route of entry, and the onset of symptoms may be delayed up to 12 hours. First symptoms of poisoning may be nausea, increased salivation, tearing of the eyes, blurred vision and constricted pupils. Other symptoms of systemic poisoning include vomiting, diarrhea, abdominal cramping, dizziness and sweating. After inhalation, respiratory symptoms like tightness of chest, wheezing, and laryngeal spasms, may be pronounced at first. If the poisoning is severe, then symptoms of convulsions, low blood pressure, cardiac irregularities, loss of reflexes and coma may occur. In extreme cases, death may occur due to a combination of factors such as respiratory arrest, paralysis of respiratory muscles or intense bronchoconstrictions. Complete symptomatic recovery from sublethal poisoning usually occurs within one week once the source of exposure is completely removed.

Skin irritation may occur from contact with the pyrethroid insecticide contained in this formulation, and produce symptoms such as itching and skin reddening. Paresthesia (a tingling or burning sensation on the surface of the skin) may also result from skin contact. This is a frequently reported symptom associated with sufficient dermal exposure to alpha-cyano (or Type II) synthetic pyrethroids and normally subsides without treatment within 24 hours. The onset of these symptoms usually occurs 2-12 hours after exposure. Mucous membrane irritation involving the nose, throat and upper respiratory tract may occur from inhalation of dust during end use of the product.

Based on EPA Toxicity Category criteria, this product is moderately toxic orally and essentially non-toxic dermally. In addition, animal studies have shown that it can cause moderate irritation to the conjunctiva of the eye with all irritation resolving within 72 hours.

SIGNS OF CHRONIC OVEREXPOSURE: Cholinesterase inhibition sometimes persists for 2-6 weeks; thus repeated exposure to small amounts of this material may result in an unexpected cholinesterase depression causing symptoms such as a vague feeling of physical discomfort or uneasiness, weakness, and anorexia that resemble other illnesses such as influenza.

3. HAZARDS IDENTIFICATION, cont'd

Exposure to a concentration that would not have produced symptoms in a person that was not previously exposed may produce severe symptoms of cholinesterase inhibition in a previously exposed person.

In addition, this product may contain an amount of total crystalline silica (quartz) which ranges from 0 to 10%. However, the amount of respirable crystalline silica is expected to be significantly lower based on data provided by the raw material manufacturer. Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of progressive pulmonary fibrosis. Severe and permanent lung damage may result.

CARCINOGENICITY: This product is not listed as a carcinogen by NTP or IARC, or regulated as a carcinogen by OSHA. However, it may contain crystalline silica (quartz), a substance which is classified by NTP as a Group 2 carcinogen (may be reasonably anticipated to be a carcinogen) and by IARC as a Group 1 carcinogen (sufficient evidence in humans for carcinogenicity).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: No specific medical conditions are known which may be aggravated by exposure to the organophosphate insecticide contained in this formulation; however, any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient. As with any material which can cause upper respiratory tract irritation, such as the pyrethroid insecticide contained in this formulation, persons with a history of asthma, emphysema, or hyperreactive airway disease, may be more susceptible to a response at low concentration. In addition, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

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4. FIRST AID MEASURES

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately. Be sure the contact areas are clean to prevent contamination of the rescuer.

INGESTION: If ingestion is suspected, call a physician or poison control center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 mL) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

4. FIRST AID MEASURES, cont'd

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

NOTE TO PHYSICIANS: This product contains an Organophosphate (OP) Insecticide (Tebupirimfos). Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. In the USA and other countries, contact your local or national poison control center for more information.

Establish airway and oxygenation. IV Atropine sulfate is the antidote of choice. Moderately severe poisoning: use 0.4-2.0 mg in adults or 0.05 mg/kg in children. Repeat every 15 minutes until atropinization is achieved. Severe poisoning may require larger doses. Cholinergic toxicity may recur as atropinization wears off; monitor patient closely. Draw blood for RBC and plasma cholinesterase. In addition, Pralidoxime (2-PAM) is indicated during the first 36 hours in severe poisonings. Slow IV administration (no less than 2 minutes) of 1 gm in adults or 20-50 mg/kg in children may be repeated in 1 to 2 hours if muscle weakness, twitching, and/or respiratory depression persist. Avoid morphine, aminophylline, phenothiazines, reserpine, furosemide and ethacrynic acid. Watch for pulmonary edema which may develop in serious cases of poisoning even after 24 hours. At first sign of pulmonary edema, place patient in oxygen tent and treat symptomatically.

Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) followed by water (2 glasses for adults, 1 glass for children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

This product also contains Cyfluthrin, a synthetic pyrethroid. Published data indicate vitamin E acetate can prevent and/or mitigate symptoms of paresthesia caused by synthetic pyrethroids.

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5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point:	Not applicable
Autoignition Temperature:	Not applicable
Flammable Limits:	Not applicable

EXPLOSIVITY: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: This product may emit hazardous fumes of an unknown composition if the product is heated to decomposition temperatures in a direct flame.

EXTINGUISHING MEDIA: Water; Dry Chemical

5. FIRE FIGHTING MEASURES, cont'd

FIRE FIGHTING INSTRUCTIONS: Keep out of smoke. Cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain runoff to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

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6. ACCIDENTAL RELEASE MEASURES

GENERAL: Isolate the area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up the spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with detergent and bleach solution. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways.

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7. HANDLING AND STORAGE

HANDLING: Prevent skin contact. Do not breathe fumes. Wear appropriate personal protective equipment (See Section 8). Wash thoroughly and change clothes after handling. Keep product away from food, drink, cosmetics, and tobacco products. See product label for more detailed handling procedures.

STORAGE: Store in a cool, dry area designated specifically for pesticides. do not store near any materials intended for use or consumption by humans or animals.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Maintain exposure levels below applicable exposure limits through the use of general and local exhaust ventilation.

RESPIRATORY PROTECTION: Under normal conditions of use, respiratory protection is not needed; however, if use conditions lead to excessive concentrations of airborne dust, use a properly FIT-TESTED NIOSH/MSHA approved respirator fitted with organic vapor cartridges and a particulate prefilter. Specific use regulations are listed on the label.

SKIN PROTECTION: Avoid skin contact. Wear long sleeves and trousers, and chemical-resistant gloves, such as nitrile, to prevent dermal exposure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION, cont'd

EYE PROTECTION: Goggles should be used to prevent dust from getting into the eyes.

OTHER PROTECTION: There should be an eyewash station and a safety shower in the work area.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid granule
Appearance:	gray, tan or reddish
Odor:	Slight onion-like odor
Odor Threshold:	Not available
Boiling Point:	Not applicable
Freezing/Melting Point:	Not applicable
Bulk Density:	38-43 lb/cu. ft.
Evaporation Rate:	Not applicable
Vapor Pressure:	Not established
Vapor Density:	Not applicable (air = 1)
Percent Volatile by Vol:	Not established
Solubility (Water):	Not available
Solubility (Other):	Not available
pH:	Not available
Partition Coefficient (O/W):	Not available

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10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): Product is stable under normal use conditions.

INCOMPATIBILITY: Strong oxidizers and bases; may react with methanol.

HAZARDOUS DECOMPOSITION PRODUCTS: Not established

HAZARDOUS POLYMERIZATION: This product will not polymerize.

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11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. Other toxicological information listed is for the two active ingredients, Cyfluthrin and Tebupirimfos.

INGESTION:	Oral LD_{50} (rat):	145/52.8 mg/kg (male/female)
INHALATION:	Inhalation LC_{50} (rat):	>2.06/>0.87 mg/L (male/female, 4 hr, dust)
DERMAL:	Dermal LD_{50} (rat):	>5040 mg/kg

11. TOXICOLOGICAL INFORMATION, cont'd

IRRITATION:	Eye irritation (rabbit):	Moderate irritation to the conjunctiva with all irritation clearing by 72 hours post-treatment
	Skin irritation(rabbit):	Not a skin irritant
SENSITIZATION:	Skin sensitization: (guinea pig)	Not a dermal sensitizer

SUBCHRONIC TOXICITY: In a 3 week rat dermal toxicity study using Cyfluthrin technical the following effects were observed at 340 and 1000 mg/kg doses: reduced feed consumption, red nasal discharge, urine stains, and scabbing, crusty, discolored and raised zones at the dose site. There were dermal and epidermal alterations to the treated skin. A NOEL of 100 mg/kg was established. A 13 week inhalation study with Cyfluthrin showed reduced body weight at doses of 0.71 and 4.51 mg/m^3. A NOEL of 0.09 mg/m^3 was established. A dermal toxicity study using Tebupirimfos on rabbits was run for three weeks using doses of 0.3, 1.0 or 3.0 mg/kg. Cholinesterase inhibition occurred at 1.0 mg/kg or greater. The NOEL was 0.3 mg/kg. Inhalation studies with rats for four weeks at 0.16, 1.04 and 6.71 mg/m^3 gave an LOEL of 1.04 mg/m^3, and an NOEL of 0.16 mg/m^3 based on RBC ChE inhibition.

CHRONIC TOXICITY: Cyfluthrin has been investigated in chronic feeding studies using two different strains of rats. In each study, Cyfluthrin was administered for 2 years at dietary concentrations ranging from 50 to 450 ppm. Body weight gains were decreased at concentrations of 150 ppm and greater. Changes in clinical chemistries occurred at 450 ppm. In one of the studies, histopathology revealed a numerical increase in mammary gland adenocarcinomas at 450 ppm. This finding was not statistically significant when compared to the controls and is not considered to be compound-related. In each study, the overall NOEL was 50 ppm based on decreased body weight gains. In a 1 year feeding study, dogs were administered Cyfluthrin at dietary concentrations of 50, 100, 360 or 650 ppm. Beginning on week 8, the high-dose was reduced to 500 ppm for the remainder of the study due to severe clinical neurological symptoms. Body weights were decreased for animals of the high-dose. Neurological findings (gait abnormalities and postural reaction deficits) were observed at doses of 360 ppm and greater. The NOEL was 100 ppm.

In a 1 year feeding study on dogs, Tebupirimfos was administered at dietary concentrations of 0.2, 0.7 or 5.0 ppm The LOEL was 5.0 ppm based on plasma, erythrocyte, and brain cholinesterase inhibition. The NOEL was 0.7 ppm. Rats were fed Tebupirimfos for 2 years at dietary concentrations of 1, 5 or 25 ppm. The LOEL was 5 ppm on the basis of cholinesterase inhibition. The NOEL for systemic effects was 1 ppm. In a 6 month supplemental cholinesterase study using rats, 0.3 ppm was established as a statistical NOEL for erythrocyte cholinesterase.

MUTAGENICITY: Numerous *in vitro* and *in vivo* mutagenicity studies on both Cyfluthrin and Tebupirimfos have been conducted and all have been negative.

CARCINOGENICITY: Chronic feeding studies using both rats and mice with either Cyfluthrin or Tebupirimfos have shown no evidence of carcinogenicity.

REPRODUCTIVE TOXICITY: In reproductive studies performed with Cyfluthrin the only observable effects were noticed at levels that were toxic to the parent. A minimum NOEL of 50 ppm for both parental and reproductive toxicity was established. A two generation reproductive toxicity study with Tebupirimfos at 1, 5 and 25 ppm in rats showed reproductive effects at the maternally toxic level of 25 ppm. The reproductive NOEL was 5 ppm.

11. TOXICOLOGICAL INFORMATION, cont'd

DEVELOPMENTAL TOXICITY: For Cyfluthrin developmental studies were performed on rats using oral gavage doses from 1 to 30 mg/kg. No developmental effects were observed, and the NOEL was the highest dose tested in each study. Similar results (no teratogenic effects) were observed during an inhalation study using rats. In the rabbit, there was maternal toxicity and increased post-implantation loss at 180 mg/kg. The NOEL was 20 mg/kg.

For Tebupirimfos oral studies were done in rats using 0.25, 0.50 and 0.75 mg/kg. No fetotoxic or teratogenic effects were observed. A study done with rabbits using oral doses of 0.03, 0.1 and 0.3 mg/kg also showed no teratogenic effects. The NOEL for embryo and maternal toxicity was 0.1 mg/kg.

NEUROTOXICITY: Two oral studies with Cyfluthrin, one in hens using very high dose levels and one in rats using doses of 40 to 80 mg/kg, showed minimal nerve damage occurred and this was completely reversible within a 3 month recovery period. Dermal and inhalation studies, which are more relevant to field exposure, showed no evidence of delayed neurotoxicity in hens. A special inhalation study using litters of 10 day old mice and their mothers showed 50 mg/m^3 doses to be fatal to the pups. At 15 mg/m^3 decreased motility, temporary scratching, and tonic convulsions were observed immediately after exposure in the young mice. Increased motor activity was also observed. At four months histopathological investigations did not reveal any treatment-related findings in the mice.

There was no evidence of a neurotoxic effect in antidote protected hens treated by oral gavage at 10 mg/kg with Tebupirimfos. In an acute neurotoxicity study using rats, Tebupirimfos was administered as a single oral dose at analytically confirmed levels of 0.5, 2 or 5 mg/kg for males and 0.3, 0.5 and 1 mg/kg for females. All clinical signs and neurobehavioral effects were ascribed to acute cholinergic toxicity, occurring at dose levels that produced substantial inhibition of cholinesterase activity, and with complete recovery in surviving animals within 14 days following treatment. A thirteen week study in rats at doses up to 60 ppm (males) or 40 ppm (females) showed no clinical signs or neurobehavioral effects that were not ascribed to cholinergic toxicity. There were no correlative micropathologic findings within the neural tissues or skeletal muscle. The neurotoxicity NOEL's were 60 ppm for males and 40 ppm for females (highest doses tested)

Excluding cholinergic responses, there were no neurotoxic effects observed in oral studies on hens and rats, following both acute and chronic administration.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: No information is available.

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12. ECOLOGICAL INFORMATION

GENERAL: This product is toxic to fish and other wildlife. Keep out of any body of water. Do not contaminate water when disposing of equipment washwaters or wastes.

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13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed by use according to label instructions, contact your nearest State Pesticide or Environmental Control Agency, the Hazardous Waste representative at the nearest EPA regional office or national equivalent to these agencies, for guidance. Open dumping is prohibited.

CONTAINER DISPOSAL: Do not discard "SMARTBOX®" container. All "SMARTBOX®" containers must be returned to the place where they were purchased. Contact AMVAC Customer Service (323-264-3910) for instructions in the event any difficulty in return of the "SMARTBOX®" is experienced. Do not attempt to open or tamper with the "SMARTBOX®". Once empty, the "SMARTBOX®" is not intended for reuse by the user.

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14. TRANSPORTATION INFORMATION

DOT CLASS:	6.1
UN NUMBER:	UN2783
IMDG CLASS (sea):	6.1
IATA CLASS (air):	6.1
MARINE POLLUTANT:	Not listed
PACKING GROUP:	III
HAZARD LABEL(S):	Toxic
PROPER SHIPPING NAME(S):	Organophosphorus pesticide, solid, toxic (tebupirimfos and cyfluthrin)
REPORTABLE QUANTITY:	No

PACKAGING

GENERAL DESCRIPTION:	50 lb "SMARTBOX®"

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15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	No
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

15. REGULATORY INFORMATION, cont'd

Section 302 Extremely Hazardous Substances: None
Section 313 Toxic Chemicals: Cyfluthrin (CAS 68359-37-5) - 0.22%

CERCLA/EHS REPORTABLE QUANTITIES (RQ): None

STATE REGULATIONS:

CALIFORNIA (Proposition 65): Warning: This product contains a chemical known to the State of California to cause cancer - Crystalline silica (quartz).

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16. OTHER INFORMATION

MSDS STATUS:

Date This Revision: 19 October, 2005
Date Previous Revision: 17 November 2003
Person Responsible for Preparation: Gary A. Braden

REASONS FOR REVISION: A change was made in the NFPA flammable code from 0 to 1 to reflect the current definition of flammability. There are formatting changes throughout the MSDS.

DISCLAIMER: This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
ADR	-	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
OSHA	-	Occupational Safety and Health Administration
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

This is the last page of this MSDS. There should be 10 pages.