



G L A T F E L T E R

Material Safety Data Sheet

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

MSDS Code: 3100-016W

Manufacturer Information

P. H. Glatfelter Company
Printing and Carbonless Papers Division
232 East 8th Street
Chillicothe, Ohio 45601

Phone: 740-772-3111

Emergency # : 800-424-9300 CHEMTREC®

Product Name: Damage Detection Agent

Synonyms

CB Damage Detection Agent

Product Use

Aerosol spray to detect damaged micro-capsules on carbonless copy paper.

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

Section 2 - HAZARDS IDENTIFICATION

Emergency Overview

- * Product is a clear aerosol liquid with a solvent odor.
- * Liquid and vapors are extremely flammable.
- * Vapor may cause flash fire.
- * Do not puncture - contents under pressure
- * Liquid may be harmful if inhaled or swallowed.
- * May cause eye, skin, and respiratory tract irritation.

Potential Health Effects

Inhalation

May be harmful if inhaled. Symptoms may include respiratory tract irritation, headache, dizziness, confusion, hallucinations, muscle weakness, nausea, and other signs of central nervous system depression. Prolonged or repeated exposure may cause central nervous system damage, vision failure, hearing loss, respiratory system effects, and death. Accumulation of vapors can cause asphyxiation without warning.

Skin

May cause skin irritation. Symptoms may include redness, itching, severe drying, and cracking. Prolonged or repeated skin exposure may cause dermatitis due to defatting of the skin.

Eye

May cause eye irritation. Irritation symptoms may include burning sensation, tearing, redness and swelling.

Ingestion

Exposure by ingestion is not expected to occur through normal industrial use.

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Medical Conditions Aggravated by Exposure

Chronic respiratory, cardiac, or neurological conditions may be aggravated by repeated exposure

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent
108-88-3	Toluene	65-75
106-97-8	Butane	10-20
74-98-6	Propane	10-20
Trade Secret	Phenolic Resin	1-5

Component Information/Information on Non-Hazardous Components

This product contains component(s) identified as a Glatfelter trade secret. This information will be made available to qualified health professionals when required.

This material is a controlled product under Canadian WHMIS regulations.

Section 4 - FIRST AID MEASURES

Inhalation

Remove exposed subject to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, administer oxygen (by trained personnel only). Get medical attention.

Skin

Remove contaminated clothing. Wash skin with soap and flush thoroughly with plenty of water. Obtain medical attention if irritation develops or other symptoms occur. Clean contaminated clothing before reuse or dispose of properly.

Eyes

First check the victim for contact lenses and remove if present. Immediately flush eyes with plenty of water or normal saline for at least 15 minutes while holding eyelids open. If symptoms such as redness or irritation develop or persist, get immediate medical attention. Do not put any medication in the victim's eyes unless instructed by a physician.

Ingestion

If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. If the victim is unconscious, keep airway open and lay the victim on his or her side with the head lower than the body.

Note to Physician

This product contains an ingredient which may aggravate pre-existing kidney and respiratory disorders.

Section 5 - FIRE FIGHTING MEASURES

General Fire Hazards

Product is a highly flammable aerosol liquid. DO NOT SPRAY NEAR OPEN FLAMES. Keep away from heat, electrical equipment and sparks. Contents of can are extremely flammable and under pressure. Exposure to direct sunlight or temperatures above 120° F may cause cans to burst. Vapors are heavier than air and can collect in low areas; vapors can travel to an ignition source and flash back.

Hazardous Combustion Products

Hazardous combustion products include black smoke and toxic fumes of carbon dioxide and carbon monoxide.

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Extinguishing Media

Use dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective as an extinguishing agent, but water should be used to keep fire-exposed containers cool to prevent build-up and possible autoignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable.

Fire Fighting Equipment/Instructions

Keep unnecessary people away; isolate hazard area and deny entry. Remove containers exposed to fire if possible, otherwise cool them from the side with water spray. Emergency equipment including self-contained breathing apparatus (SCBA) and full fire fighting turnout gear should be worn by fire fighters.

Section 6 - ACCIDENTAL RELEASE MEASURES

Evacuation Procedures

Close off area. Keep unnecessary personnel away.

Containment Procedures

Isolate the spill area. Eliminate all heat and ignition sources. Ventilate the area of the spill and isolate the area.

Clean-up Procedures

Absorb small spills using inert material (e.g. paper towels, spill control pillows, absorbent particulate). Scoop up material for recovery or cover with inert absorbent material. Scoop up absorbed material and place in a container for disposal. In the event of a large spill, contain by diking with dry sand, sorbent booms, or other absorbent material. When cleaning spills, wear appropriate personal protective equipment including splash-proof safety goggles and chemical resistant gloves (see Section 8).

Special Procedures

Refer to Emergency Response Guidebook, Guide Number 126 for additional information.

Section 7 - HANDLING AND STORAGE

Handling Procedures

Do not handle near open flames, heat, sparks or other sources of ignition. Use in a well-ventilated area. Vapors can accumulate and ignite. Avoid breathing vapors or mists. Do not puncture - contents under pressure. Avoid contact with skin and eyes.

Storage Procedures

Keep containers closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible materials (see Section 10). Store at room temperature and away from direct sunlight. DO NOT store near open flames or other sources of ignition.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Neither the American Conference of Governmental Industrial Hygienists or the provinces of Canada have developed exposure limits for this product. However, the following exposure guidelines exist for product ingredients.

Component Exposure Limits

Toluene (108-88-3)

ACGIH: 20 ppm TWA

NIOSH: 100 ppm TWA; 375 mg/m³ TWA
150 ppm STEL; 560 mg/m³ STEL

Alberta: 50 ppm TWA; 188 mg/m³ TWA

British Columbia: 20 ppm TWA

Manitoba: 20 ppm TWA

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New Brunswick: 50 ppm TWA; 188 mg/m3 TWA
Skin - potential for cutaneous absorption

NW Territories: 100 ppm TWA; 375 mg/m3 TWA
150 ppm STEL; 560 mg/m3 STEL
Skin notation

Nova Scotia: 20 ppm TWA

Nunavut: 100 ppm TWA; 375 mg/m3 TWA
150 ppm STEL; 560 mg/m3 STEL
Skin notation

Ontario: 20 ppm TWA

Quebec: 50 ppm TWAEV; 188 mg/m3 TWAEV
Skin designation

Saskatchewan: 50 ppm TWA
60 ppm STEL
Potentially harmful after absorption through skin or mucous membranes

Yukon: 100 ppm TWA; 375 mg/m3 TWA
150 ppm STEL; 560 mg/m3 STEL
Skin notation

Butane (106-97-8)

ACGIH: 1000 ppm TWA

NIOSH: 800 ppm TWA; 1900 mg/m3 TWA

Alberta: 1000 ppm TWA

British Columbia: 600 ppm TWA
750 ppm STEL

Manitoba: 1000 ppm TWA

New Brunswick: 800 ppm TWA; 1900 mg/m3 TWA

NW Territories: 800 ppm TWA; 1901 mg/m3 TWA
1000 ppm STEL; 2576 mg/m3 STEL

Nova Scotia: 1000 ppm TWA

Nunavut: 800 ppm TWA; 1901 mg/m3 TWA
1000 ppm STEL; 2576 mg/m3 STEL

Ontario: 800 ppm TWA

Quebec: 800 ppm TWAEV; 1900 mg/m3 TWAEV

Saskatchewan: 1000 ppm TWA
1250 ppm STEL

Yukon: 600 ppm TWA; 1400 mg/m3 TWA
750 ppm STEL; 1600 mg/m3 STEL

Propane (74-98-6)

ACGIH: 1000 ppm TWA

NIOSH: 1000 ppm TWA; 1800 mg/m3 TWA

Alberta: 1000 ppm TWA

British Columbia: 1000 ppm TWA

Manitoba: 1000 ppm TWA

New Brunswick: Simple Asphyxiant

Nova Scotia: 1000 ppm TWA

Ontario: 1000 ppm TWA

Quebec: 1000 ppm TWAEV; 1800 mg/m3 TWAEV

Saskatchewan: 1000 ppm TWA
1250 ppm STEL

Yukon: Simple asphyxiant

Engineering Controls

Adequate local and/or general exhaust ventilation or other engineering controls to keep airborne concentrations below exposure limits

PERSONAL PROTECTIVE EQUIPMENT

Eye / Face Protection

Recommend use of safety glasses with side shields or goggles.

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Skin Protection

Not required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemically resistant, non-permeable gloves (polyvinyl alcohol or Viton gloves are recommended). Customer is responsible for determining suitability of gloves for the work environment and other solvents or chemicals that the employee may normally be exposed to. Replace gloves at first signs of deterioration (hardening, cracking, softening or swelling).

Respiratory Protection

Respiratory protection not normally required. If airborne contaminant levels may exceed recommended exposure limits, NIOSH approved respiratory protection appropriate for employee exposure levels is recommended. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.1 requirements must be followed whenever workplace conditions warrant a respirator's use.

* * *Section 9 - PHYSICAL AND CHEMICAL PROPERTIES* * *

Physical State:	Liquid	Appearance:	clear liquid
Color:	colorless	Physical Form:	aerosol
Odor:	solvent odor	Odor Threshold:	Not available
pH:	Not available	Melting Point:	Not available
Boiling Point:	<0 °F	Decomposition:	Not available
Flash Point:	<0 °F (Tag Closed Cup)	Evaporation Rate:	Not available
OSHA Flammability Class:	Flammable	LEL:	1.0 (propellant)
UEL:	9.5 (propellant)	Vapor Pressure:	760 mmHg
Vapor Density (air = 1):	>1	Density:	Not available
Specific Gravity (water = 1):	0.74	Water Solubility:	Not available
Coeff. Water/Oil Dist:	Not available	Auto Ignition:	Not available
Viscosity:	Not available	Volatility:	Not available
Volatility by Volume:	100 % @ 70 °F	Volatility by Weight:	99.4 %

* * *Section 10 - STABILITY AND REACTIVITY* * *

Chemical Stability

Product is stable under normal conditions of use.

Conditions to Avoid

Avoid heat, high temperatures, pressure, mechanical shock, incompatibles or other conditions that might result in a hazardous situation.

Incompatibilities

The ingredients of this product are incompatible with strong oxidizing agents

Hazardous Decomposition

Hazardous decomposition products include black smoke and toxic fumes of carbon dioxide and carbon monoxide.

Hazardous Polymerization

Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

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Section 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

Product may cause respiratory, eye, and skin irritation. Toluene may be slowly absorbed through the skin. Exposure of toluene at 100-200 ppm levels may cause a change in motor activity, psychophysiological tests, hallucinations, blood changes, antipsychotic behavior and central nervous system effects. Prolonged or repeated exposure to toluene liquid may cause skin dryness or dermatitis. Overexposure to toluene may also cause loss of vision and hearing, respiratory problems, enlarged liver, cardiac sensitization, and seizures. Accumulation of vapors of butane and propane may cause asphyxiation without warning, producing dizziness and sleepiness. In an eye irritation study with rabbits, phenolic resin was not found to be a primary eye irritant. In a skin irritation study with rabbits, phenolic resin was not found to be a primary skin irritant (primary irritation index of 0.04). Phenolic resin did not cause dermal sensitization in guinea pigs in a closed patch test. Several toxicological studies for phenolic resin are as follows:

Inhalation, rat, LC50 = > 5 g/m³ (4 hr);
DERMAL, rabbit, LD50 = > 2000 mg/kg;
Oral, rat, LD50 = > 5000 mg/kg

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Toluene (108-88-3)

Inhalation LC50 Rat 12.5 mg/L 4 h; Inhalation LC50 Rat >26700 ppm 1 h; Oral LD50 Rat 636 mg/kg; Dermal LD50 Rabbit 8390 mg/kg; Dermal LD50 Rat 12124 mg/kg

Butane (106-97-8)

Inhalation LC50 Rat 658 mg/L 4 h

Propane (74-98-6)

Inhalation LC50 Rat 658 mg/L 4 h

Carcinogenicity

No information available for the product. Conflicting study results regarding the carcinogenic potential of toluene have been reported; however, when benzene contamination is not present, it is unlikely that toluene exposure alone is carcinogenic.

Component Analysis

Toluene (108-88-3)

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Neurotoxicity

No information is available for this product. Toluene may cause central nervous system depression. Repeated exposure to toluene has a cumulative effect on the nervous system. The neurological effects of chronic exposure to high levels of toluene gradually progress to an irreversible state. Besides effects on behavior and intelligence, degeneration of the optic nerve and nerve deafness have also been reported in excessive exposure.

Mutagenicity

No information is available for this product. Toluene was not mutagenic in the Ames Salmonella/microsome assay. The results of chromosomal assays have been mixed. In vitro sister chromatid exchange and chromosome aberrations using human lymphocytes have been both positive and negative.

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Teratogenicity

No information is available for this product. Women exposed to toluene in laboratory work had a approximately 5-fold increased risk of spontaneous abortions, without an increase in birth defects. Intentional and deliberate abuse of toluene has produced birth defects that include microcephaly, CNS deficiencies, and facial abnormalities, as well as disturbances in growth. The spectrum of defects in children of women who have abused toluene and other solvents has been called Fetal Solvent Syndrome. Several animal studies using rats, mice, and rabbits have shown that exposure to toluene during gestation has caused fetotoxicity, fetal biochemical/behavioral changes, and developmental effects.

Additional Data

No epidemiology information is available for this product.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

No information is available on ecotoxicity of this product.

Component Analysis - Aquatic Toxicity

Toluene (108-88-3)

Fish: 96 Hr LC50 Pimephales promelas: 15.22-19.05 mg/L [flow-through] (1 day old); 96 Hr LC50 Pimephales promelas: 12.6 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.89-7.81 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 14.1-17.16 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 5.8 mg/L [semi-static]; 96 Hr LC50 Lepomis macrochirus: 11.0-15.0 mg/L [static]; 96 Hr LC50 Oryzias latipes: 54 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 28.2 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 50.87-70.34 mg/L [static]

Algae: 96 Hr EC50 Pseudokirchneriella subcapitata: >433 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: 12.5 mg/L [static]

Invertebrate: 48 Hr EC50 Daphnia magna: 5.46 - 9.83 mg/L [Static]; 48 Hr EC50 Daphnia magna: 11.5 mg/L

Environmental Fate

No data available for this product.

Section 13 - DISPOSAL CONSIDERATIONS

North American Waste Number and Descriptions

This product is known to be a hazardous waste according to RCRA and Canadian regulations. Provincial jurisdictions use various hazardous waste control regulations and the Transportation of Dangerous Goods Act to define hazardous waste and appropriate packaging, reporting, storage and transport. The use, mixing or processing of this material may alter this product. Contact federal, provincial/state and local authorities in order to generate or ship a waste material associated with this product to ensure materials are handled appropriately and meet all criteria for disposal of hazardous waste.

Component Waste Numbers - Canada

Toluene (108-88-3)

Sched. 5: 100.0 mg/kg
Sched. 7 Part 2: U220

Component Waste Numbers - RCRA

Toluene (108-88-3)

U Series: waste number U220

Disposal Instructions

DO NOT puncture or incinerate. Dispose of in accordance with local, state and federal regulations.

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Section 14 - TRANSPORT INFORMATION

TDG Information

Shipping Name: Aerosols, flammable
UN #: UN1950 **Hazard Class:** 2.1 **Packing Group:** None
Required Label(s): 2.1

US DOT Information

Shipping Name: Aerosols, flammable
UN/NA #: UN1950 **Hazard Class:** 2.1 **Packing Group:** None
Required Label(s): 2.1
Additional Info.: Special Restrictions: Maximum net quantity is 75 kg for passenger aircraft, 150 kg for cargo aircraft. May be stored "on deck" or "under deck" on a cargo vessel and a passenger vessel. Under deck stowage must be in a mechanically ventilated space. Store "clear of living quarters" and "away from" sources of heat.

IATA Information

Shipping Name: Aerosols, flammable
UN #: UN1950 **Hazard Class:** 2.1 **Packing Group:** None
Required Label(s): 2.1
Passenger & Cargo Aircraft (Packing Instruction / Max. Net Qty. per Pkg.): 203 / 75 kg
Cargo Aircraft Only (Packing Instruction / Max. Net Qty. per Pkg.): 203 / 150 kg
Carton must be 4G if shipped under Packing Instruction 203.

IMDG Information

Shipping Name: Aerosols
UN #: UN1950 **Hazard Class:** 2 **Packing Group:** None
Required Label(s): 2
Additional Info.: MFAG Table No.: 620

Section 15 - REGULATORY INFORMATION

General Product Information

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

WHMIS Classification

Class B: Flammable and Combustible Material
Division 5: Flammable aerosols
Class D: Poisonous and Infectious Material
Division 2: Materials Causing Other Toxic Effects
Subdivision A: Very Toxic Materials

Component Analysis - Inventory

Component	CAS	CAN
Toluene	108-88-3	DSL
Butane	106-97-8	DSL
Propane	74-98-6	DSL

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Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List.

Toluene (108-88-3)

Minimum Concentration: 1 %

Butane (106-97-8)

Minimum Concentration: 1 %

Inventory Status

All ingredients of this product are listed on the Canadian Domestic Substances List (DSL), listed on the Canadian Non-Domestic Substances List (NDSL), or are exempted from listing. If an ingredient is not currently listed, an appropriate New Substance Notification was filed with Environmental Canada during the Transitional Period prescribed by the New Substance Notification Regulations.

* * *Section 16 - OTHER INFORMATION* * *

Hazard Ratings

[Refer to Section 2 for additional label information, including target organs.]

A hazard rating has not been developed by NFPA for this product. The hazard ratings included in this MSDS have been developed based on NFPA and HMIS criteria as well as professional judgment. This information is intended solely for the use of individuals trained in these hazard rating systems.

HMIS Ratings: Health: 2 Fire: 4 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings: Health: 2 Fire: 4 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Label Information

DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE. HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION.

ATTENTION! CONTAINS A MATERIAL WHICH MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA. CONTAINS A MATERIAL MAY CAUSE NERVOUS SYSTEM EFFECTS.

Keep away from heat sparks, and flame.
Do not puncture or incinerate container.
Do not expose to temperatures above 120° F (40° C).
Keep container closed.
Use only with adequate ventilation.
Avoid breathing vapors or mists.
Avoid contact with eyes, skin, and clothing.
Wash thoroughly after handling.

FIRST AID: If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, administer oxygen (by trained personnel only).

If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. If the victim is unconscious, keep airway open and lay the victim on his or her side with the head lower than the body.

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In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation develops or persists. Clean contaminated clothing, before reuse, or dispose of properly.

In case of fire, use water, dry chemical, CO₂, or foam.

For additional information, refer to the Material Safety Data Sheet (MSDS) for this product

Key / Legend

ACGIH = American Conference of Governmental Industrial Hygienists. TLV = Threshold Limit Value. NIOSH = National Institute of Occupational Safety and Health. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NFPA = National Fire Protection Association. HMIS = Hazardous Material Information System. CFR = Code of Federal Regulations. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. SARA = Superfund Amendments and Reauthorization Act. HEPA = High Efficiency Particulate Air.

Preparation and Revision Information

Prepared by P.H. Glatfelter (Glatfelter), Printing and Carbonless Papers Division, Product Stewardship Center, 232 East 8th Street, Chillicothe, OH 45601.

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This is the end of MSDS # 3100-016W