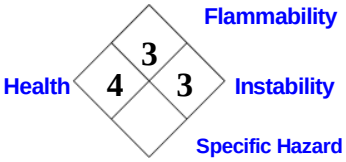
Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	**MAGNACIDE® H HERBICIDE**	**Code**	XCH
Supplier	Baker Petrolite A Baker Hughes Company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400	**Version**	11.0
Material Uses	Herbicide	**Effective Date**	**04/10/2012**
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (001)281-276-5400 CANUTEC 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)	**Print Date**	04/10/2012
			® a trademark of Baker Hughes, Inc.

National Fire Protection Association (U.S.A.)



Section 2. Hazards Identification

Physical State and Appearance	State: Liquid., Color: Colorless to light yellow., Odor: Aldehyde like.
CERCLA Reportable Quantity	Acrolein, 0.15 gal. of this product. Hydroquinone, 4401 gal. of this product.
Hazard Summary	DANGER. May be highly toxic if inhaled.. May cause chronic effects. Flammable liquid. Vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to a distant ignition source and flash back. Static discharges can cause ignition or explosion when container is not bonded. May be toxic by skin absorption. May cause skin sensitization (allergic reaction).
Routes of Exposure	Skin (Permeator), Skin (Contact), Eyes, Inhalation.
Potential acute health effects	
Eyes	May be severely irritating to the eyes. Prolonged contact may cause burns.
Skin	May be severely irritating to the skin. May cause burns on prolonged contact. Skin sensitizer. May cause allergic skin reactions with repeated exposure. May be toxic if absorbed through the skin.
Inhalation	May be highly toxic if inhaled.
Ingestion	Not considered a likely route of exposure, however, may be toxic if swallowed.
Medical Conditions aggravated by Exposure	Exposure to this product may aggravate medical conditions involving the following: cardiovascular system, respiratory tract, skin/epithelium, eyes.

See Toxicological Information (section 11)

Continued on Next Page

Additional Hazard Identification Remarks	Overexposure to vapors may be fatal. Inhalation exposure studies have determined the rat LC50 to be 26 ppm at one hour exposure and at four hour exposure to be 8.3 ppm. The NIOSH IDLH (Immediately Dangerous to Life and Health) value is 2 ppm. The primary route of exposure is inhalation; acute exposure may result in lacrimation, tracheobronchitis, pneumonia, and lung injury (at 20 ppm). The low odor detection (0.03 – 0.21 ppm) and irritation threshold (0.25 - 0.5 ppm) and acutely irritating effects of acrolein usually prevent chronic toxicity effects. Splashes to the eye may result in blepharoconjunctivitis (bloodshot eyes), lid edema, fibrinous or pustular discharge, and deep or long-lasting corneal injury. See Section 11 for additional information.

Section 3. Composition/Information on Ingredients

Name	CAS #	% by Weight
Acrolein	107-02-8	95

See Section 8 for information on permissible exposure limits and threshold limit values.

Section 4. First Aid Measures

Eye Contact	Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open. Get medical attention immediately.
Skin Contact	Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of lukewarm, gently flowing water until no evidence of chemical remains (for at least 20-60 minutes). Get medical attention if irritation occurs.
Inhalation	Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.
Ingestion	Get medical attention immediately. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Wash out mouth with water if person is conscious. If fully conscious promptly drink one to two glasses of water. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions.
Notes to Physician	Treatment of the irritative effects of acrolein should be symptomatic and supportive. Following inhalation of acrolein, signs of respiratory dysfunction should be sought and hypoxia corrected. Specific treatment for bronchospasm and non-cardiogenic pulmonary edema may be necessary. Hypoxia may also occur following the ingestion of acrolein if there is pulmonary aspiration and/or laryngeal edema. The extent and severity of the corrosive effects on the upper gastrointestinal mucosa should be determined, for example, by endoscopy, and advice should be sought regarding the need for surgical intervention. Probable mucosal damage may contraindicate the use of gastric lavage.
Additional First Aid Remarks	Persons exposed to vapors may have a delayed reaction and experience severe irritation of the respiratory tract and delayed pulmonary edema. Therefore, it is advisable to keep person exposed to high concentrations of vapor under observation for 24 hours following exposure If fully conscious promptly drink one to two glasses of water. Get immediate medical attention. Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression, and convulsion may be needed.

Section 5. Fire Fighting Measures

Flammability of the Product	Flammable liquid. Vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to a distant ignition source and flash back. Static discharges can cause ignition or explosion when container is not bonded.
OSHA Flammability Class	IB

Continued on Next Page

Products of Combustion	These products are carbon oxides (CO, CO2) Peroxides..
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static. Heat.
Fire Fighting Media and Instructions	In case of fire, use alcohol-resistant foam, dry chemicals, or CO2 fire extinguishers. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Toxic gases and vapors (such as carbon monoxide and peroxides) may be released in a fire involving acrolein. In the presence of sufficient oxygen and complete combustion, the combustion products further breakdown to carbon dioxide and water.

Section 6. Accidental Release Measures

Spill	General Information: Evacuate all personnel to an upwind area and determine medical treatment needs. If qualified to do so through appropriate training contain or mitigate the spill as outlined below. Put on appropriate personal protective equipment. See Section 8 for information on use of respiratory protection appropriate for dealing with small spills. For large spills, wear fully encapsulating, vapor protective clothing (Level A Suit) and seek assistance from local fire department hazardous materials response team. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking, or flames in spill area. Approach release from upwind. Ventilate the release area. Large Spill: Vapor suppression: if available, blanket spill area with alcohol-resistant foam to reduce the vapor concentration. Reapply foam as needed to counteract the rapid breakdown of the foam blanket. Pump bulk fluid to appropriate storage containers for proper disposal. After recovery of the bulk fluid, neutralization of any remaining material can be accomplished by covering with sodium carbonate (soda ash) and mixing with water. Ratio is 20 pounds of soda ash to each gallon of acrolein followed by 5 gallons of water per gallon of acrolein. The soda ash and acrolein will form a solid by-product after addition of water. When reactivation is ccomplete scoop the solid material into properly marked containers for disposal. Contain all water for proper disposal. Prevent runoff from entering drains, sewers or waterways. Small Spill (< 1 pound) Cover release with sodium carbonate (soda ash) and mix into spill with water. The soda ash and acrolein will form a solid by-product after addition of water. Alternately, absorb with paper towel, dry sand or other absorbent. For ground or surface contamination, remove contaminated media and dispose of properly. Contain all water for proper disposal. Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.
Other Statements	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.
Additional Accidental Release Measures Remarks	Not available.

Continued on Next Page

Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Store in a secure and well ventilated area. Keep away from heat, sparks and flame. Keep away from incompatible materials. Keep container tightly closed when not in use. To avoid fire or explosion, ensure containers and equipment are properly bonded and grounded prior to transferring product. This is normally accomplished through the use of Baker Petrolite-specified standard application procedures. When using product under non-routine conditions (e.g., laboratory samples), ensure material and container are properly bonded and grounded.
Additional Handling and Storage Remarks	Do not reuse empty container. Return empty containers to Baker Petrolite Corporation, 19815 South Lake Road, Taft, CA 93268.

Section 8. Exposure Controls/Personal Protection

Exposure Limits	Acrolein	**ACGIH (United States). Skin** CEIL: 0.1 ppm **OSHA PEL 1989 (United States).** TWA: 0.1 ppm 8 hours. TWA: 0.25 mg/m^3 8 hours.
Additional Information on Exposure Limits	The STEL of 0.3 ppm for acrolein was vacated by Court order, but it is still in effect in AK, CA, MI, MN, NC, TN and WA.. The OSHA permissible exposure levels shown above are the OSHA 1989 levels or from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Petrolite Corporation recommends that these lower exposure levels be observed as reasonable worker protection.	
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.	

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes	Chemical safety goggles.
Body	Long sleeved shirts and work pants.
Respiratory	Full-face respirator use is required when connecting or disconnecting containers to application equipment, or any situations where the permissible exposure limit may be exceeded. As per NIOSH, full-face air-purifying respirators may be worn to protect personnel up to 2 ppm (IDLH) acrolein. The air purifying respirators should have organic vapor cartridge(s) or canister and a protection factor of 50. Exposure levels of unknown concentrations or greater than 2 ppm acrolein require the use of full-face positive pressure supplied-air breathing apparatus with a protection factor of 10,000
Hands	Chemical resistant gloves. Butyl rubber gloves.Replace as needed.
Feet	Chemical resistant boots or overshoes.
Other information	Not available.

Additional Exposure Control Remarks	Persons exposed to vapors may have a delayed reaction and experience severe irritation of the respiratory tract and delayed pulmonary edema. Therefore, it is advisable to keep person exposed to high concentrations of vapor under observation for 24 hours following exposure.

Continued on Next Page

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	**Odor**	Aldehyde like.
pH	Not available.	**Color**	Colorless to light yellow.
Specific gravity	0.846 - 0.858 @ 16°C (60°F)		
Density	7.05 - 7.15 lbs/gal @ 16°C (60°F)		
Flash Points	Closed cup: -25°C (-13°F). (TCC)		
Flammable Limits	L.E.L. 2.8% U.E.L. 31%		
Autoignition Temperature	220°C (428°F)		
Initial Boiling Point	Not available.		
Boiling Point	53°C (127°F)		
Vapor Density	1.93 (Air = 1)		
Vapor Pressure	234.9 - mm Hg @ 22°C (72°F)		
Evaporation Rate	>1 (compared with Ether (anhydrous)).		
VOC	Not available.		
Viscosity	0 - 0 cP @ 20°C (68°F)		
Pour Point	-86.7ºC(-124ºF)		
Solubility (Water)	Soluble (22% by weight @ 20ºC)		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	This product is stable unless there is loss of inhibitor.
Incompatibility with Various Substances	Alkalies, amines, light, and oxidizing materials. Alkaline or strong acid contamination can cause a reaction which can be rapid and violent. Prevent water contamination of acrolein storage containers.
Hazardous Decomposition Products	Carbon Oxides and peroxides.
Hazardous Polymerization	Hazardous polymerization may occur.
Special Stability & Reactivity Remarks	Loss of hydroquinone stabilizer may result in polymerization under certain conditions. Air introduced into closed containers may cause a slow polymerization, resulting in loss of product quality.

Continued on Next Page

Section 11. Toxicological information

Component Toxicological Information

Acute Animal Toxicity

Acrolein	ORAL (LD50): Acute: 29 mg/kg [Rat]. 11.8 mg/kg [Female rat]. 10.3 mg/kg [Male rat]. DERMAL (LD50): Acute: 231.4 mg/kg [Rabbit]. VAPOR (LC50): Acute: 26 ppm 1 hours [Rat]. 8.3 ppm 4 hours [Rat]. 18 mg/m^3 4 hours [Rat].

Chronic Toxicity Data

1) Acrolein

A potential human health effect resulting from overexposure is the development of permanent lung damage in the form of decreased pulmonary (lung) function, and delayed pulmonary edema (fluid in the lungs) which can lead to chronic respiratory disease. As a highly reactive aldehyde, prolonged or repeated overexposures can produce long-term respiratory effects by significantly reducing ciliary action in the upper airways (i.e., interfering with the body's ability to clear mucous and foreign substances from the respiratory tract) and causing tissue damage throughout the lungs manifested as emphysema.

Acrolein levels of 0.4 to 4.9 ppm caused eye and nose irritation and structural changes in the respiratory system of hamsters, rats and rabbits (Ref. 1). Acrolein produced greater susceptibility to respiratory infections in mice (Ref. 2) and rats (Ref. 3).

Developmental/Reproduction studies

Acrolein has been tested for developmental and reproductive health effects. Results from developmental studies (Ref. 4, 5) indicated this material did not cause teratogenic effects in rats or rabbits at doses that caused maternal toxicity. A two-generation rat reproductive study (Ref. 6) did not reveal any evidence of reproductive toxicity in either sex from any treatment group (maximum dose = 7.2 mg/kg). A second two-generation reproductive study in rats did not reveal any evidence of reproductive toxicity in either sex from any treatment group (maximum dose = 6 mg/kg) (Ref. 6).

Dermal Testing

In a 21 day dermal toxicity test in rabbits dosed at 7, 21 and 63 mg/kg of acrolein, toxicity was evidenced by slight to significant reduction in body weight gain, nasal mucous discharge, lethargy, slight to moderately lowered food consumption and increased frequency of lesions of the skin and lungs. Slight mortality in female rabbits dosed at 21 and 63 mg/kg was observed. No notable effects in hematology, blood chemistry, organ weights or organ weight ratios were observed (Ref. 7).

Inhalation toxicity study

Rats were exposed by inhalation (6h/day 5 d/week for 62 days) to 0, 0.4, 1.4 and 4.0 ppm acrolein. Mortality was only observed in the 4 ppm group and was due mainly to acute bronchopneumonia. Weight gain in the 4 ppm group was significantly slower than the control group. Examination of the 4 ppm group revealed bronchiolar epithelial necrosis and sloughing and edema (Ref. 8).

Chronic toxicity/Oncogenicity studies

In a 12-month chronic toxicity test in dogs (Ref. 9), the highest dose (2 mg/kg) tested resulted in changes in blood chemistry, but no compound-related tumors or lesions were observed. An 18-month oncogenicity study in mice (Ref. 10) did not reveal any compound-related tumors or lesions; the highest dose tested (4.5 mg/kg) resulted in increased mortality in the test group. A 24-month chronic toxicity/oncogenicity study in rats (Ref. 11) also did not reveal any compound related tumors or lesions. The high dose, 2.5 mg/kg, caused an increased mortality in the test group. No indications of cancer were found in the tests.

Other Studies

Mutagenicity studies

Continued on Next Page

Effects of Acrolein on the In Vitro Induction of Chromosomal Aberrations in CHO Cells: No significant increase in the number of chromosomal aberrations above the background (Ref. 12).

Effects of Acrolein on the In Vivo Induction of Chromosomal Aberrations in Rat Bone Marrow Cells: No significant increase in the number of chromosomal aberrations above the background (Ref. 13).

Salmonella Liquid Suspension Mutant Fraction Assay: Acrolein did not induce concentration-dependent mutagencity in any of the 5 Salmonella strains, either in the presence or absence of metabolic activation (Ref. 14).

Metabolism Data

Metabolism studies in freshwater fish, shellfish, goats, hens, rats and leaf lettuce indicate that acrolein is metabolized and does not accumulate in the tissue (Ref. 15-19).

Product Toxicological Information

Acute Animal Toxicity	ORAL (LD50): Acute: 29 mg/kg [Rat]. 11.8 mg/kg [Female rat]. 10.3 mg/kg [Male rat]. DERMAL (LD50): Acute: 231.4 mg/kg [Rabbit]. VAPOR (LC50): Acute: 26 ppm 1 hours [Rat]. 8.3 ppm 4 hours [Rat].
Target Organs	cardiovascular system, respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	In an aerobic aquatic metabolism study, the water phase revealed the rapid degradation of acrolein with all metabolites further mineralized to carbon dioxide. Results indicate hydration was an early step in acrolein degradation. The first-order kinetic half-life of acrolein was determined to be 33.7 hours in the water phase under laboratory conditions. Under field conditions, the half-life of acrolein in freshwater ranged from six to ten hours (Ref. 20). In an aerobic soil metabolism study the half-life of acrolein was found to be 4.2 hours in soil-water mixtures and was ultimately transformed into carbon dioxide (Ref.21).
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	This product is very toxic to aquatic organisms: Bluegill sunfish (Lepomis macrochirus): 96H LC50 24 ppb Rainbow trout (Oncorhynchus mykiss): 6H LC50 24 ppb Water flea (Daphnia magna): 48H LC50 22 ppb Eastern oysters (Crassostrea virginica): 96H EC50 180 ppb Mysid shrimp (Mysidopsis bahia): 96H LC50 500 ppb Mysid shrimp (Holmesimysis costata) 96H LC50: 790 ppb Sheepshead minnows (Cyprinodon variegatus) 96H LC50: 570 ppb Marine copepod (Acartia tonsa): 48H LC50 55 ppb Saltwater diatom (Skeletonema costatum) 120H EC50: 27 ppb

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Continued on Next Page

Additional Waste Remarks	Do not reuse empty container. Return empty containers to Baker Petrolite Corporation, 19815 South Lake Road, Taft, CA 93268. EPA Waste Code for acrolein is: Waste Acrolein, stabilized Waste Code – P003

Section 14. Transport Information

DOT Classification	Acrolein, stabilized, 6.1(3), UN1092, I	
DOT Reportable Quantity	Acrolein, 0.15 gal. of this product. Hydroquinone, 4401 gal. of this product.	
Marine Pollutant	Acrolein.	
Additional DOT Information	Toxic-Inhalation Hazard, Zone A DOT SP-14341 (DOT: SP-14341 applies only to 4BW welded cylinders.)	
Emergency Response Guide Number	131P	

Section 15. Regulatory Information

HCS Classification	Target organ effects. Flammable liquid. Toxic.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Acrolein; SARA 313 Toxic Chemical Notification and Release Reporting: Acrolein; SARA 302/304 Emergency Planning and Notification substances: Acrolein; Hazardous Substances (CERCLA 302): Acrolein, 0 gal. of this product.; SARA 311/312 MSDS distribution - chemical inventory - hazard identification: fire; reactive; immediate health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Acrolein; Clean Water Act (CWA) 311 Hazardous Substances: Acrolein; Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Acrolein;
Threshold Planning Quantity (TPQ)	Acrolein 74 gal.
TSCA Inventory Status	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory. This product does not contain any components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States.
State Regulations	State specific information is available upon request from Baker Petrolite.

Continued on Next Page

International Regulations	
Canada	All components are compliant with or are exempted from listing on the Canadian Domestic Substance List.
WHMIS (Canada)	B-2, D-1A, E
European Union	All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.
	International inventory status information is available upon request from Baker Petrolite for the following countries: Australia, China, Korea (TCCL), Philippines (RA6969), or Japan.
Other Regulatory Information	No further regulatory information is available.

Section 16. Other Information

Other Special Considerations

References:

1. Feron, J.V. et al.; Toxicology 9 (1-2): 47-58 (1978).
2. Jakab, G.J.; Am Rev Resp Dis 1977 155:33-38.
3. Bouley, G.: Eur J Toxicol Eur Environ Hyg 1975: 8:291-297.
4. Parent, R.A., Caravello, H.E., Christian, M.S., and Hoberman, A.M.. Developmental Toxicity of Acrolein in New Zealand White Rabbits. Fundamental and Applied Toxicology. 20, 248-256 (1993).
5. Teratolgy Study of Acrolein in Rats, Bioassay Systems Corporation, Woburn, MA (1982) (Unpublished Study).
6. Parent, R.A., Caravello. H.E., and Hoberman, A.M.. Reproductive Study of Acrolein on Two Generations of
Rats. Fundamental and Applied Toxicology. 19:228-237 (1992).
7. 21 Day Dermal Test of Acrolein in Rabbits, Bioassay Systems Corporation, Woburn, MA, 1982 (Unpublished Study).
8. A Sub-Chronic Inhalation Study of Fischer 344 Rats Exposed to 0, 0.4, 1.4, or 4.0 ppm Acrolein. Brookhaven National Laboratory, Upton, NY, 1981.
9. Parent, R.A., Caravello, H.E., Balmer, M.F., Shellenberger, T.E., and J.E. Long, One Year Chronic Toxicity of Orally Administered Acrolein to Beagle Dogs. J. Appl. Tox. 12(0): 1-9 (1992).
10. Parent, R.A., Caravello, H.E., and Long, J.E.. Oncogenicity Study of Acrolein in Mice. Journal of the American College of Toxicology. 10(6), 647-659 (1991).
11. Parent, R.A., Caravello, H.E. and Long, J.E.. Two-year Toxicity and Carcinogenicity Study of Acrolein in
Rats. Journal of Applied Toxicology, Vol. 12(2), 131-139 (1992).
12. Effects of Acrolein on the In Vitro Induction of Chromosomal Aberrations in CHO Cells, Bioassay Systems, Woburn, MA, 1982 (Unpublished Study).
13. Effects of Acrolein on the In Vivo Induction of Chromosomal Aberrations in Rat Bone Marrow Cells, Bioassay Systems, Woburn, MA, 1982 (Unpublished Study).
14. Salmonella Liquid Suspension Mutant Fraction Assay, Bioassay Systems, Woburn, MA, 1980 (Unpublished
Study).
15. Nordone, A.J., Dotson, T.A., Kovacs, M.F., Doane, R.A., and Biever, R.C.. Metabolism of [14C] Acrolein (MAGNACIDE® H Herbicide): Nature and Magnitude of Residues Using Freshwater Fish and Shellfish.
Environ. Toxicol. And Chemistry. 17(2): 276-281 (1998).
16. Nordone, A.J., Dotson, T.A., Kovacs, and Doane, R.A.. [14C] Acrolein: Accumulation and Metabolism in Leaf Lettuce. Bull. Environ. Contam. Toxicol. (58):787-792 (1997).
17. Sharp, D.E., Berge, M.A., Paust, D.E., Talaat, R.E., Wilkes, L.C., Servatius, L.J., Loftus, M.L., Caravello, H.E., and Parent, R.A.. Metabolism and Distribution of [2,3-14C]Acrolein in Lactating Goats. J. of Agric. and Food Chem. 49(3): 1630-1638 (2001).
18. Sharp, D.E., Berge, M.A., Hennes, M.G., Wilkes, L.C., Servatius, L.J., Loftus, M.L., Caravello, H.E., and Parent, R.A.. Metabolism and Distribution of [2,3-14C]Acrolein in Laying Hens. J. of Agric. and Food Chem. 49(3): 1639-1647 (2001).
19. Parent, R.A., Caravello, H.E., and Sharp, D.E.. Metabolism and Distribution of [2,3-14C]Acrolein in

Continued on Next Page

Sprague-Dawley rats. Journal of Applied Toxicology, Vol 16(5), 449-457 (1994).
20. Smith, A.M., Mao, J., Doane, R.A., and Kovacs, M.F.. Metabolic Fate of [14C]Acrolein Under Aerobic and Anaerobic Aquatic Conditions. J. of Agric. and Food Chem. 43(9): 2497-2503 (1995).
21. Estimation of the Aerobic Biotransformation Rates of Acrolein (MAGNACIDE® H Herbicide, MAGNACIDE® B Biocide) in Soil, SRI International, Menlo Park, CA, (1990) (Unpublished Study).

10/07/02 - Update to Section 3
10/31/02 - Update to Section 14
11/06/02 - Update to sections 5, 8, 14, and 15 (Canada)
04/29/03 - Update to Section 2
05/05/03 - Update to Section 7
12/30/03 - Changes to Sections 2, 3, 8, 10, and 11.
05/18/04 – Changes to Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.
01/25/05 – Changes to Sections 3 and 11.
01/08/07 – Changes to Section 15.
03/18/09 - Changes to sections 2, 3, 5, 8, 9, and 15.
08/21/09 - Changes to section 5 and 6.
04/10/12 - Change to section 14.

Baker Petrolite Disclaimer

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.