



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Diazinon Formulation Samples

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Attached are the results (Table 1) of the Analytical Chemistry Section's analyses of twenty two Diazinon formulation samples. Of these twenty two samples five have TEPP (O,O-TEPP) levels significantly greater than what is normally expected in formulations with label declarations of 25% Diazinon. Two of the twenty two samples have levels of sulfotepp (S,S-TEPP) one would expect of products manufactured previous to or in the early 1980's. These five samples containing the high levels of O,O-TEPP also have very high concentrations of Thionotepp (O,S-TEPP). The high levels of these two chemicals (O,S-TEPP and O,O-TEPP) which have high acute toxicities are probably due to degradation resulting from storage and the presence of small amounts of water. The low concentration of Diazinon when compared to the label declaration of 25% active ingredient is an obvious additional indication of significant Diazinon degradation.

It is interesting to note that two of those six samples containing less than 0.002% Diazinon have significant levels of O,O-TEPP and O,S-TEPP while the other four have very little.

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* It is obvious that the twelve samples containing Diazinon in concentrations which are in general agreement with the label claim did not degrade and have no significant levels of TEPP, Thionotepp or Sulfotepp.

Table 2 (attached) contains information which may help in determining the date of the sample production.

Attachment

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TABLE 1.

SUMMARY OF COMPOUNDS FOUND IN DIAZINON FORMULATIONS *

Sample	Manufacturer	Sample Color	% 0,0-TEPP	% 0,S-TEPP	% S,S-TEPP	% O-diazinon	% Diazinon
B89-8-A	Ciba-Geigy	Dark yellow/brown	<0.002	<0.002	0.0286	<0.002	<0.002
B89-8-B	Ciba-Geigy	Pale yellow	<0.002	<0.002	0.0186	0.0344	25.7
B89-8-C	Ciba-Geigy	Yellow	0.315	1.71	0.0808	0.0022	12.1
B89-8-D	Ciba-Geigy	Pale orange	<0.002	<0.002	0.0159	0.0723	23.4
B89-8-E	Ciba-Geigy	Pale yellow	<0.002	<0.002	0.0278	0.0581	24.4
B89-8-F	Ciba-Geigy	Light yellow	0.0424	0.0920	0.0733	0.0104	22.8
B89-8-G	KENCO	Clear	<0.002	<0.002	0.0160	0.0283	25.5
B89-8-H	Ciba-Geigy	Light yellow	0.345	7.70	0.354	0.0020	11.7
B89-8-I	Ciba-Geigy	Clear	<0.002	<0.002	0.295	0.0329	24.1
B89-8-J	Ciba-Geigy	Orange	0.209	0.665	0.136	<0.002	<0.002
B89-8-K	KENCO	Clear	<0.002	<0.002	0.0136	0.0375	25.4
B89-8-L	KENCO	Clear	<0.002	<0.002	0.0116	0.0338	25.4
B89-8-M	KENCO	Clear	<0.002	<0.002	0.0120	0.0353	24.4
B89-8-N	Ciba-Geigy	Yellow	0.0044	<0.002	0.0158	<0.002	<0.002
B89-8-O	Ciba-Geigy	Orange	<0.002	<0.002	0.141	<0.002	<0.002
B89-8-P	Fed. Chem.	Pale Orange/brown	<0.002	<0.002	0.0169	<0.002	<0.002
B89-8-Q	Ciba-Geigy	Dark yellow	0.613	2.77	0.156	0.0023	4.04
B89-8-R	Ciba-Geigy	Yellow	0.291	0.306	0.0607	<0.002	<0.002
B89-8-S	Ciba-Geigy	Pale brown	<0.002	<0.002	0.0089	0.0536	24.6
B89-8-T	Ciba-Geigy	Pale yellow	<0.002	<0.002	0.018	0.0322	26.0
B89-8-U	KENCO	Pale/clear	<0.002	<0.002	0.0150	0.0278	28.3
B89-8-V	PBI/Gordon	Clear	<0.002	<0.002	0.0096	0.0100	12.0

* All samples were Spectracide, labelled 25% diazinon,
except: B89-8-P - Arab Lawn & Garden, 25% diazinon
B89-8-V - ACME Diazinon Spray 40-14, 12.5% diazinon

TABLE 2.

ACL Lab #	Can Condition	Bar Code	Lot # Can Bottom	Mfg. Label # (under address)
B89-8-A	Swollen, rusted bottom	None	Rust - Can not read	CGA-ALL21B 040
B89-8-B	Normal - No leaks, no swelling	None	SP 090910	CGA ALL21B 040
B39-8-C	Slight swell, no leaks	0-74514 06050-8	SP191717	CGA ALL1R14 092
B89-8-D	Intact, no swell, no leaks	None	SP202101	CGA ALL21C 052
B89-8-E	Intact, no swelling/leaking	None	SP202302	CGA ALL21C 052
B89-8-F	Intact, no swelling/leaking	None	SP971502	CGA ALL21B 040
B89-8-G	Intact, no swelling/leaking	7451406050-8	None	None
B39-8-H	Intact, no swelling/leaking	0-7451406170	64121	CGA ALL3R9 A39279 048
B39-8-I	Slight swelling, no leaks	None	42271	CGA ALL21 A35354 026
B39-8-J	Slightly swollen, no leaking	None	SP971402	CGA ALL21B 040
B89-8-K	Leaking, but not swollen	0-7451406050-8	None	None
B89-8-L	Leaking, slightly swollen	0-7451406050-8	None	None
B89-8-M	Slightly swollen, leaking	0-7451406050-8	Can not read	None
B89-8-N	Rusted through bottom of can - transf. in FL to large brown bottle	None	Rust - can not read	CGA ALL1 R8A35353 026
B39-8-O	Swollen, no leaking	None	41101	CGA ALL1R8 A35353 026
B39-8-P	Swollen	None	6047	None
B39-8-Q	Slightly swollen	0-7451406050-8	SP072507	CGA ALL1R13 121
B89-8-R	Slightly swollen	0-7451406170-3	9017118	CGA ALL3R10 059
B89-8-S	Surface rust, no swelling	0-7451452060-6	SP290702	CGA ALL3R12 092
B89-8-T	Normal	0-7451406050-8	SP072507	CGA ALL1R13 121
B89-8-U	Normal	0-7451406050-8	07244	32205-6246
B89-8-V	Normal	0-7025140140	7422	None