agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

PROTOCOL FOR THE APPROVAL OF INDUSTRIAL WOOD PRESERVATIVES IN SOUTH AFRICA

SECOND EDITION 2010

The Protocol for the Approval of Wood Preservatives in South Africa is available from:

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SCOPE

The protocol described in this document has been prepared to assist wood preservative manufacturers and/or suppliers in the procedures required to provide regulatory authorities with the necessary information and data on which to base their judgement and make an assessment regarding compulsory registration and approval of industrial wood preservative products in South Africa. This is intended for primary wood preservation (excluding supplemental and remedial wood preservatives).

The information given herein is not exhaustive and merely provides guidelines on registration and approval procedures. For more detailed procedural guidelines, the relevant authorities concerned should be contacted directly. (See Annexure E.)

ACKNOWLEDGEMENTS

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Timberlife
CSIR
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Department of Health
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Arch Wood Protection
Arcelor Mittal
Celcure Africa
Department of Agriculture, Forestry and Fisheries
Department of Health
Dolphin Bay Chemicals
FFS Refiners
SAWPA
Timberlife

CONTENTS

PREFACE

The treatment of timber in South Africa is regulated in terms of VC9101, *The compulsory specification for preservative treatment of timber* and regulation A13(b) of The National Building Regulations.

The requirements of the regulations are that if timber is to be treated it shall be properly treated in terms of a South African National Standard (SANS) in a treatment plant certified by an accredited certification body and marked with the appropriate certification mark using chemicals which also complies and is manufactured in accordance with a National Standard.

The treatment process shall be carried out in terms of the SANS 10005, The Preservative Treatment of Timber which caters for the Hazard classifications. (See Annexure D).

In South Africa the authorities directly instrumental in the formal approval of wood preservatives, are the Department of Agriculture, Forestry and Fisheries, regarding product registration, Accredited Certification Bodies regarding conformity assessment, and the SABS Standards Division regarding standardisation. Incorporation into a South African national standard is a prerequisite for application in South Africa. (Contact details of these organisations can be found in Annexure 'E').

Procedures and requirements for product registration and for incorporation into and/ or compliance with SANS specifications, therefore, form the basis of this document (flow diagrams regarding application / approval procedures for wood preservatives in South Africa is given in Annexure A).

The registration of a wood preservative with the Department of Agriculture, Forestry and Fisheries will depend on whether the product being registered is a completely new product or whether it is a product where the properties of which are known to the Department because it has already been registered by another organisation.

The registration is a complex procedure and for any organisation which is not fully aware of the requirements, it is advisable to contact the office of the Registrar or the use of a consultant.

1. PRODUCT REGISTRATION: PROCEDURES AND REQUIREMENTS

All wood preservative products supplied and used in accordance with SANS 10005 in South Africa must be registered with the Registrar, Department of Agriculture, Forestry and Fisheries, in terms of the "Fertilizers, Farm Feeds, Agricultural and Stock Remedies Act, 1947 (Act 36 of 1947)," as amended.

A "new" wood preservative means:

(a) a chemical compound (specifically the active ingredient) not previously registered in terms of Act 36 of 1947, or
(b) a new formulation consisting of active ingredients already registered with the Department of Agriculture, Forestry and Fisheries, or
(c) a combination thereof, irrespective of whether or not it has been registered in other countries.

Should application for registration of a wood preservative, which consists of an active ingredient or formulation which is identical to that which is already registered in the name of another

organisation, be applied for, reference can be made to the relevant trade name and registration number of the already registered product, provided that the original registration holder agrees in writing. In such a case, only the application form need to be completed, a contract and submitted along with a draft label, MSDS of the formulated product with the new company name.

Should application for registration of a generic wood preservative which consists of active ingredients similar to existing registered products, be made, proof shall be given of compliance to the relevant national standard.

1.1 Registration procedure

When a wood preservative is to be registered, the following basic steps are involved:

1.1.1 An application for registration, (i.e. "Application for the Registration of an Agricultural Remedy"; Form ARG 01/040 including List I and List II), and a proposed draft label, both in triplicate, together with the MSDS's for both the active ingredient(s) and the formulated product, and a complete set of documents consisting of all the required information and data described hereunder, are to be submitted by the applicant to the Registrar: Act 36 of 1947, Department of Agriculture, Forestry and Fisheries, Private Bag X 343, Pretoria, 0001. A registration fee is payable on submission of any such application.

1.1.2 On receipt of the application by the Department of Agriculture, Forestry and Fisheries, it is submitted to the Administrator for Agricultural Remedies at the Department of Agriculture, Forestry and Fisheries for processing.

1.1.3 In the case of a new active ingredient, the full toxicological package is forwarded by the Department of Agriculture, Forestry and Fisheries, to the Department of Health for evaluation and preparation of a risk assessment. Should the risk assessment be found to be favourable, authority is granted to the Department of Agriculture, Forestry and Fisheries, to proceed with the registration.

1.1.4 Efficacy data and relevant information is evaluated by the Department of Agriculture, Forestry and Fisheries or may be forwarded by to specialist research institutions for evaluation and comment, if required.

1.1.5 Should the product comply with all the requirements of Act 36 of 1947, the registration is granted and the registration certificate is issued to the applicant by the Office of the Registrar of the Department of Agriculture, Forestry and Fisheries.

1.1.6 All registrations are subject to renewal every three years, on or before the 31st May.

1.2 Registration requirements

The following summarises information and important data required for the registration of a wood preservative (as previously defined) for use in South Africa

1.2.1 Full details of applicant.

1.2.2 Product description and application/marketing field (e.g. industrial use).

1.2.3 Details of the formulator / manufacturer of the product.

1.2.4 Details of the manufacturer(s) of the active ingredient(s).

A letter of confirmation that such manufacturer(s) are prepared to supply the relevant active ingredient(s) to the formulator, needs to accompany the application. When applicable, importation details must also be provided.

1.2.5 Formulation details:

The chemical composition shall be based on technical raw material and purity of active ingredients. The chemical designation of inert ingredients must also be indicated.

1.2.6 Type of formulation (physical state), for example: water-soluble powder, or solution concentrate in organic solvent or water, etc.

1.2.7 Product status

If applicable indicate other countries in which the product has been registered.

1.2.8 Physical properties of formulation, for example, flash point, kinematic viscosity, density, vapour pressure, boiling point, solubility, storage stability as determined by using the relevant ASTM, SANS test methods.

1.2.9 Analytical method(s) for determination of active ingredient(s) in the formulation where relevant.

1.2.10 Toxicological data and information (to be evaluated by the Department of Health)

Acute toxicity of:

(a) active ingredient(s), and

(b) formulation, in terms of:
- Oral LD_{50} (rat)
- Dermal LD_{50} (rat/rabbit)
- Inhalation LC_{50} (rat)

Supportive data and information regarding the above must be submitted. Sub-acute and chronic toxicity data may be required on request.

Notes:
- The above are minimum requirements
- A detailed list of applicable toxicity studies as required by the Department of Health is given in Annexure B. Please note the difference between a "new" and a "generic" active ingredient.
- The Acceptable Daily Intake (ADI) value of the chemicals involved will be determined by the Department of Health after an evaluation of all toxicological data has been satisfactorily completed. Refer to Annexure B, 1.2 to 1.6, for data requirements.
- Kindly be advised that the Registrar will grant conditional registrations for products whose toxicological risk assessment has already been assessed and authorized by other recognized international regulatory bodies. Such bodies include the Joint FAO/WHO Meeting on Pesticide Residue (JMPR), Australian

Pesticides and Veterinary Medicine Authority (APVMA), Environmental Protection Agency in United States of America (EPA), Pesticide Management Regulatory Authority (PMRA) in Canada, Japan and European Food Safety Authority/ European Commission/Country. In order for the Registrar to consider granting conditional registration, the following information must be submitted to the office of the Registrar:

- Toxicological risk assessment reports issued by the above-mentioned regulatory authorities must be submitted to the office of the Registrar.
- Local or international independent comprehensive expert(s) [toxicologist(s)] risk assessment report must be submitted. The report should be accompanied by a detailed CV of the toxicologist(s). The report must include effect of pesticides on human health (including Maximum Residue Levels and withdrawal periods) and environment. The data submission (dossiers) for the toxicological studies must be organized according to the Organization for Economic Cooperation and Development (OECD) format.
- Conditional registration however is not intended to replace the Department of Health (DoH) toxicological evaluation process. This only means that the product will be temporarily be registered for sale in the country until such time that the normal process has gone through. Normal process means that the DoH has done its own evaluation and assessment.
- Depending on the outcome of the toxicological evaluation and the results thereof from the DoH, the Registrar will then take an appropriate decision as to whether a full registration is granted or the conditional registration be revoked. This will be decided on a case by case basis depending on the content of the report from the DoH.

1.2.11 Environmental impact studies

Information regarding relevant environmental impact studies must be submitted.

Note: The Department of Health does the evaluation of environmental data as part of a complete investigation into the toxicological package submitted with the application for registration. Refer to Annexure B, 1.7 to 1.8, for data requirements.

1.2.12 Performance / efficacy information and data on the formulation (if there is a need to be evaluated by an independent, recognised research institution)

(a) Biological wood destroying agencies that are intended to be controlled/prevented by the formulation (i.e. wood decaying fungi and/or wood-boring insects, and/or drywood termites, and/or subterranean termites, and/or marine borers) must be indicated.

(b) Hazard class (es) to which the formulation complies (i.e. HO-i, HO-it, H2, H3, H4, H5 and/or H6 as per SANS 10005). Refer to Annexure D.

(c) Recommended minimum active ingredient and/or formulation (as may be applicable) retention levels required per cubic meter of total timber for each hazard class. Refer to Annexure D.

(d) Supportive data and information obtained from independent and internationally recognised institutions/authorities regarding the above must be provided.

Note: A summary of relevant biological efficacy data required for different hazard classes is given in Annexure C.

1.2.13 Other relevant information and data required

Depending on the hazard class(es) for which the wood preservative product is recommended, additional data regarding penetration properties (process related aspects) and its permanence properties in treated timber will be required (e.g. leachability, volatility, UV stability, temperature stability, chemical reactivity/inactivity with other chemical compounds).

Information regarding the effect the products might have on treated timber properties such as mechanical strength, corrosiveness to metal fasteners, fire resistance, toxic emissions, paintability, gluability, colour, odour, weathering, etc, is also recommended.

1.2.14 Packaging details

Packaging material(s), container type(s), container size(s) and relevant marketing field(s) and intended labelling, is required.

1.2.15 Draft label

A draft label reflecting the following information must be submitted in triplicate:

- Product trade mark and/or trade name
- Sale and user restrictions (where applicable)
- Provision for the registration number
- Product description and application field
- Active ingredients and content (in g/kg or g/l)
- Packaging net content (in kg or l)
- Provision for the batch number and formulation/manufacturing date
- Registration holder/formulator/supplier details
- Directions for use (use restrictions, mixing instructions, applicable treatment processes and required retention levels must be clearly indicated)
- Appropriate warnings, precautions, disposal instructions, symptoms of human poisoning, first aid treatment and notes to physician / veterinarian must be clearly stated
- Toxicity group classification (colour code/band), relevant hazard symbol, relevant pictograms and their positioning within the colour band
- The final label shall display an accredited certification mark and the relevant standard number.

1.2.16 Advertisements

A draft advertisement intended advertisements regarding the product must be submitted to the Department of Agriculture, Forestry and Fisheries for approval before being published.

Whilst the Department of Agriculture, Forestry and Fisheries does not require the United Nations Number on the label, this will be required for exports.

1.2.17 Application forms

Application forms "Application for the Registration of an Agricultural Remedy"; Form ARG 01/040) and detailed guidelines* for the registration of agricultural remedies are obtainable from: Registrar: Act 36 of 1947 (see Annexure E).

2. PRODUCT STANDARDISATION: PROCEDURES AND REQUIREMENTS

Once a wood preservative compound or formulation has been registered with the Department of Agriculture, Forestry and Fisheries, it is necessary to ensure that it complies with the relevant SANS specifications.

Two specifications are applicable, i.e.:

- a "product" specification which requires that the product is manufactured and supplied to the end-user (in this case, the timber treater) within defined quality standards, and

- a "treatment" specification which requires that timber treated with the particular product complies with defined quality standards in terms of the active ingredient retention level and penetration requirements.

Note: Strict adherence to the requirements for product registration with the Department of Agriculture, Forestry and Fisheries should ensure the availability of most, if not all the relevant information required for incorporation of the product into either an existing specification or for drafting a new or amended specification.

A brief overview of the steps involved in the incorporation of wood preservatives in SANS specifications is given below.

2.1 "Product" specification

In the case of a product which is similar to an existing product for which specification(s) are already in place, compliance with the existing relevant "product" specification is required. In the case of a new wood preservative product, a written application for the drafting of a new or amended specification is to be submitted to the Manager: Construction Standards, SABS Standards Division, Private Bag X 191, Pretoria, 0001. The technical and market information that needs to accompany such application is, *inter alia*:

2.1.1 The registration number in terms of Act 36 of 1947, as granted by the Department of Agriculture, Forestry and Fisheries.

2.1.2 The type of wood preservative product/formulation, biological efficacy spectrum and intended end-use (e.g. applicable hazard classes).

2.1.3 If the application for a new standard is considered to be justifiable, an SABS Standards project number is allocated and a New Work Item (NWI) proposal prepared.

2.1.4 The NWI aimed at the industry is then launched by the SABS to ascertain whether there is a need for such a standard and whether the project is generally supported.

2.1.5 Should a favourable response from the NWI be obtained, a draft specification (working draft) is compiled by the SABS and circulated to an industry supported technical committee for comments.

2.1.6 If the working draft is acceptable to more than 50 percent of the votes and no particular problems are raised, a draft standard specification is prepared for approval by the technical committee as a final draft.

2.1.7 Approval for publication of the final draft as an SANS standard specification is finally granted by the Standards Approval Committee (SAC) of the SABS.

2.1.8 A factory audit is performed by an Accredited Product Certification Body to ensure that the manufacturer complies with the necessary quality standards. The company is then granted a permit for the manufacture and marketing of such a product under an Accredited Product Certification mark scheme.

2.1.9 A certification body will monitor product quality by means of documented production and quality control records on a continuous basis and may sample any batch at any time to test for conformance with the "product" specification.

2.2 "Treatment" specification

Existing products meeting the requirements of the applicable "product" specification, only need to comply with the requirements laid down in the existing "treatment" specification.

Should a new wood preservative product be introduced, the following procedure is generally followed (see Annexure A):

2.2.1 A written application for amending the relevant "treatment" specification(s) is to be submitted to the Manager: Construction Standards, South African Bureau of Standards, Private Bag X 191, Pretoria, 0001, South Africa.

Basic information and data that needs to accompany the application are as follows:

2.2.1.1 Proof of acceptance of the wood preservative product in the relevant SANS "product" specification.

2.2.1.2 Proposed minimum active ingredient and/or formulation retention levels for the respective hazard class(es) regarding the proposed end-use(s) of the treated timber.

2.2.1.3 Applicable performance/efficacy data regarding the proposed retention levels of the formulated product (See Annexure C).

2.2.1.4 Test methods for quantitative determination of active ingredient content in treatment solutions (mass concentration in g/l) as well as in treated timber (retention in kg/m^3).

2.2.1.5 Method for determination of active ingredient penetration in treated timber (colorimetric/spot test).

2.2.1.6 Applicable treatment method(s)/process(es) in terms of SANS 10005.

2.2.2 Should the above information meet with the minimum specified requirements, a proposed amendment to the existing "treatment" specification is drafted by the SABS Standards Division to incorporate the wood preservative product which is then circulated to their applicable technical committee for their comments.

2.2.3 If the response is not favourable, either the applicant is requested by the SABS Standards Division to resubmit and re-circulate a new proposal or, a technical committee meeting is called. During such a meeting technical aspects such as compliance with specific hazard classes, treatment requirements in terms of applicable treatment process(es), retention levels and penetration requirements, quality assurance and specific health and safety procedures are scrutinized.

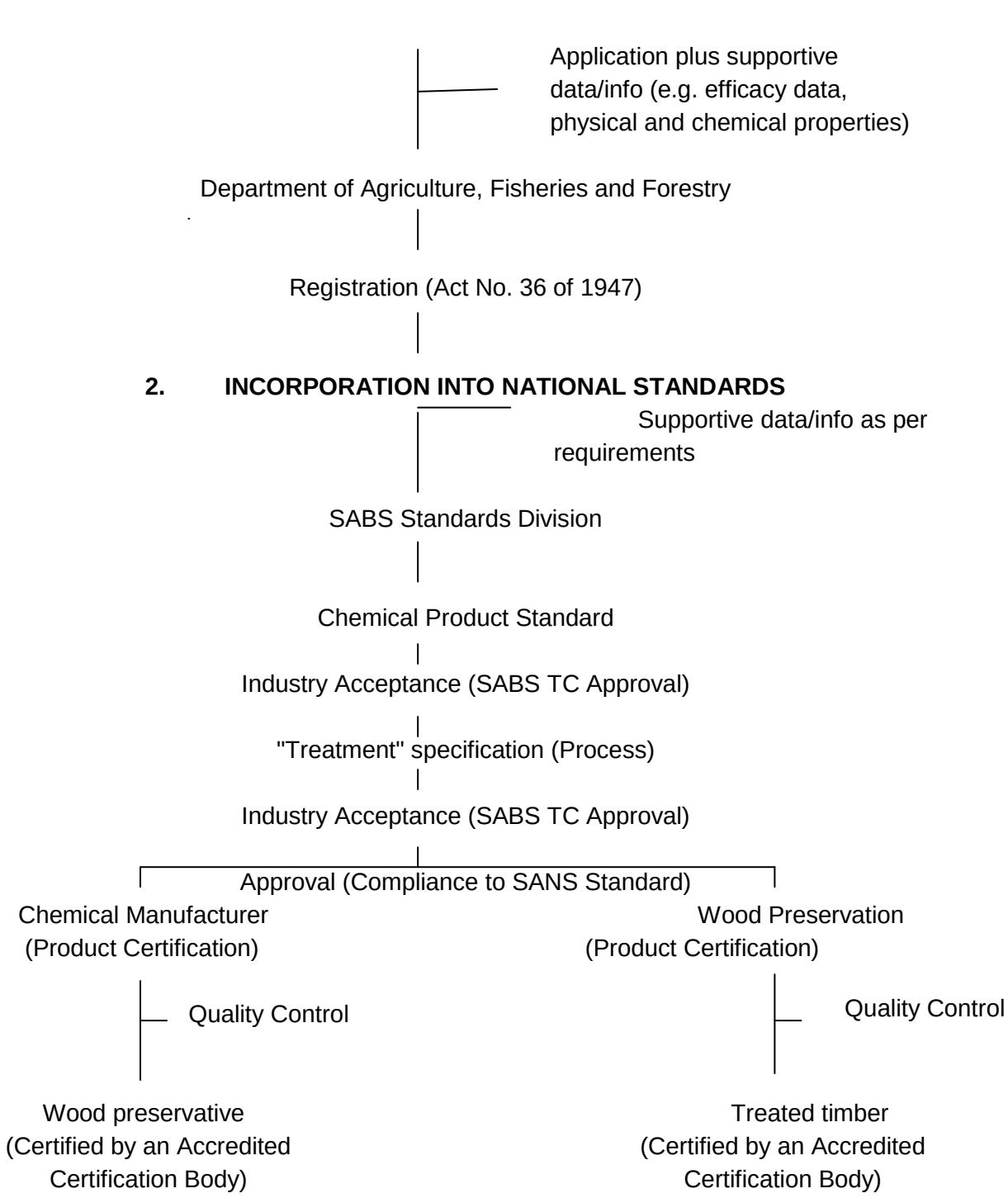
2.2.4 Once acceptance is obtained, the amendment to the "treatment" specification is finalised and approved by the Standards Approvals Committee of the SABS.

2.2.5 Timber treaters can then apply for a permit extension to treat timber with the newly incorporated wood preservative and sell such treated timber under a Product Certification mark scheme. Treated timber shall also be marked with the applicable hazard classification mark and marketed as such.

2.2.6 It remains the responsibility of the chemical supplier to ensure that all the necessary works instructions and record forms are made available to the timber treater for compliance with necessary quality assurance standards.

2.2.7 The Product Certification body will monitor at the treatment plant, documented records such as stock receipt and issue, stock control, solution mixing, solution mass concentration determination, solution adjustment and timber treatment results. Treated timber will be sampled in order to determine the actual active ingredient and / or formulation retention level and depth of penetration achieved.

ANNEXURE A
FLOW DIAGRAM REGARDING APPROVAL PROCEDURES FOR A GENERIC AND A NEW FORMULATED WOOD PRESERVATIVE IN SOUTH AFRICA



ANNEXURE B
LIST OF APPLICABLE TOXICITY STUDIES

Toxicity studies carried out in accordance with OEDC (Organization for Economically Developed Countries) test guidelines are acceptable.

This information is needed for the preparation of a risk assessment by the Department of Health. In the application to the Department of Agriculture, Forestry and Fisheries the following introductory information should be given:

PRODUCT NAME
APPLICANT INFORMATION
CURRENT INTERNATIONAL STATUS
MANUFACTURER OF ACTIVE INGREDIENT INFORMATION
ACTIVE INGREDIENT: STRUCTURAL FORMULA
IUPAC - International Union of Pure and Applied Chemistry
CAS - Chemical Abstract Number
MOLECULAR WEIGHT
MOLECULAR FORMULA
UN TRANSPORT OF DANGEROUS GOODS NUMBER
FORMULATION DETAILS
REGISTERED USE OF PRODUCT
FORMULATION DETAILS
PHYSICAL / CHEMICAL PROPERTIES:
MELTING POINT
BOILING POINT
VAPOUR PRESSURE
WATER SOLUBILITY
FLASH POINT
DENSITY
PARTITION COEFFICIENT

In addition to the above, the following detailed information must be provided:

1. NEW ACTIVE INGREDIENT

A new active ingredient is a chemical compound not previously registered in South Africa.

1.1 Acute toxicity

(a) Active ingredient(s):
- Oral LD_{50} (rat/mouse)
- Dermal LD_{50} (rat/rabbit)
- Inhalation LC_{50} (rat)
- Dermal sensitization (guinea pig)
- Primary eye irritation
- Primary skin irritation

(b) Formulated product:

- Oral LD_{50} (rat/mouse)
- Dermal LD_{50} (rat/rabbit)
- Inhalation LC_{50} (rat)
- Dermal sensitization (guinea pig)
- Primary eye irritation
- Primary skin irritation

1.2 Sub-chronic toxicity

90 days (3 months) repeated oral dose - rodent (rat/mouse)
90 days (3 months) repeated oral dose - non-rodent (dog)
90 days (3 months) repeated dermal dose (rat/rabbit/guinea pig)
90 days (3 months) repeated inhalation dose (rat/mouse)

1.3 Teratogenicity, embryotoxicity and fetotoxicity

Rat:

Range finding oral teratology
Definitive oral teratology
Multi-generation dietary reproduction

Rabbit:

Range finding oral teratology
Definitive oral teratology

1.4 Mutagenicity/genotoxicity

Gene mutation:
- *Salmonella typhimurium,* reverse mutation assay *(in vitro)*
- *Escherichia coli,* reverse mutation assay *(in vitro)*
- *Saccharomyces cerevisiae,* gene mutation assay *(in vitro)*
- Mammalian cell gene mutation tests *(in vivo)*
- *Drosophila* sex-linked recessive lethal assay *(in vivo)*
- Mouse spot test *(in vivo)*

Chromosomal aberrations:
- Mammalian cytogenetic test *(in vitro)*
- Mammalian bone marrow cytogenetic test *(in vivo)*
- Micronucleus test *(in vivo)*
- Mammalian germ cell cytogenetic assay *(in vivo)*
- Rodent dominant lethal test *(in vivo)*
- Mouse heritable translocation assay *(in vivo)*

DNA damage:
- *Saccharomyces cerevisiae,* mitotic recombination assay *(in vitro)*

DNA repair:
- Unscheduled DNA synthesis in mammalian cells *(in vitro)*

Chromosomal exchange:
- Sister chromatid exchange assay in mammalian cells *(in vitro)*

1.5 Chronic/oncogenicity

Dietary chronic - one year (12 months): Non-rodent
24 months - rat (oral/dermal/inhalation)
18 months - mice (oral/dermal/inhalation)
Acute Neurotoxicity
Delayed Neurotoxicity - hen
Chronic Neurotoxicity

1.6 Chemobiokinetics (pharmacokinetics/metabolism)

Kinetics and metabolism - rat/cow/goat
Material balance - rat/cow/goat

1.7 Ecotoxicity

Aquatic organisms:
- Acute toxicity to Bluegill Sunfish (96 hr LC_{50})
- Acute toxicity to Rainbow Trout (96 hr LC_{50})
- Acute toxicity to water flea (24 hr LC_{50})
- Early life stage toxicity test to Fathead Minnow

Avian organisms:
- Acute oral LD_{50} to Mallard Duck
- Acute oral LD_{50} to Bobwhite Quail
- 8-Day dietary LC_{50} in Bobwhite Quail

Non-target organisms:
- Acute toxicity to honey bee (48 hr)
- Acute toxicity to earthworm
- Growth inhibition of algae
- Micro-organisms

1.8 Environmental fate

Hydrolytic fate (hydrolysis) in water
Photodegradation (photolysis) in water and soil

Metabolism:
- Aerobic - soil
- Anaerobic - soil

Mobility:
- Laboratory leaching - soil
- Field leaching – soil
- Adsorption/desorption (Kad) - soil
- Volatility

Accumulation:
- Fish

Supplemental:

- Water solubility
- Octanol/water partition coefficient (Kow)
- Biodegradability

2. GENERIC ACTIVE INGREDIENT

A generic active ingredient is an off-patent version of an active ingredient already registered in South Africa.

An application to register an generic active ingredient needs only submission of the toxicological data listed below **provided** that it does not differ significantly in degree of purity or nature of impurities from the composition registered in the dossier accompanying the original application for that active ingredient (Referred to as a 5 Batch Analysis Report). Deviations or variance from the original specifications in the active ingredient of a generic causes it to be regarded as a new product.

The following toxicological data must be submitted:

2.1 Acute toxicity

(a) Active ingredient(s):
- Oral LD_{50} (rat/mouse)
- Dermal LD_{50} (rat/rabbit)
- Inhalation LC_{50} (rat)

(b) Formulated product:
- Oral LD_{50} (rat/mouse)
- Dermal LD_{50} (rat/rabbit)
- Inhalation LC_{50} (rat)
- Primary eye irritation
- Primary skin irritation

Notes:

- Further information regarding ***toxicological evaluations*** can be obtained from:
  Directorate: Environmental Health
  Department of Health
  Private Bag X 828
  Pretoria, 0001
  South Africa

ANNEXURE C
BIOLOGICAL EFFICACY DATA REQUIRED FOR DIFFERENT HAZARD CLASSES

Biological hazard	Type of test	Hazard class						
		HO-i *	**HO-it***	**H2***	**H3****	**H4**	**H5**	**H6**
Wood-boring insects	Laboratory	X	X	X	X	X	X	X
	Field					X	X	X
Drywood termites	Laboratory	X	X	X	X	X	X	X
	Field	***	***	***	***	X	X	
Subterranean termites	Laboratory and/or accelerated field	***	***	***	***	X	X	
	Field	***	***	***	***	X	X	
Decay fungi	Laboratory			X	X	X	X	X
	Field				X	X	X	X
Marine borers	Laboratory							X
	Field							X

* Evaporative ageing prior to biological testing

** Evaporative ageing and leaching prior to biological testing

*** Notwithstanding that the preservative does not necessarily provide adequate protection against attack by subterranean termites at the lower levels of retention, this data is required for informative purposes. The tests required are for above-ground purposes only. Alternatively if the preservative is claimed to provide protection against attack by subterranean termites at the lower retention levels required under HO-i, H2 and H3 the submission of acceptable data becomes compulsory.

Notes:

- With regard to field testing, a minimum of five years performance data is required.
- Field data generated at overseas sites is acceptable provided that the tests were performed by an independent and internationally recognised institution and that the biodeteriogens and timber species used are appropriate to South Africa and the proposed end-use, i.e. hazard level of exposure.

ANNEXURE D

Table D.1 - Hazard Classifications

1	2	3	4		5	6		7		8	
Hazard class	**Exposure class**	**Timber application**	**End use**		**Preservative type**	**Average net retention (assay zone) % m/m**		**Average net retention kg/m³**		**Minimum preservative penetration mm**	
						Soft-wood	**Hard-wood**	**Soft-wood**	**Hard-wood**	**Soft-wood**	**Hard-wood**
H6	Marine	Timber constantly or periodically in contact with estuarine or sea water, and subject to marine borer attack	**Poles**: piling, retaining walls, slipways, groynes, jetties, walkways		WCCA plus Creosote	- -	- -	24 plus 200	24 plus 200	50	50
			Sawn timber: piling, retaining walls, slipways, groynes, jetties, walkways		WCCA plus Creosote	- -	- -	24 plus 200	24 plus 200	Complete sapwood	Complete sapwood
H5	Fresh water	Timber constantly or periodically in contact with fresh water or heavy wet soils	**Poles**: agricultural poles, poles under flood irrigation, bridges, piling, groynes, walkways, slipways, jetties, agricultural poles for livestock **pens/retaining** walls		WCCA or WcuAz or Creosote	- 0.76 -	- 0.83 -	16 or 4 or 130	16 or 5.4 or 130	25	20
			Sawn timber	Piling, slipways, groynes, jetties, walkways, retaining walls, culverts, flood gates, drains	WCCA or WcuAz or Creosote	- 0.76 -	- - -	16 or 4 or 130	16 or - or 130	Complete sapwood	Complete sapwood
				Industrial cooling towers	WCCA	-	-	30	30	Complete sapwood	Complete sapwood
H4	Ground contact	Timber in direct contact with the ground	**Poles**	Distribution	WCCA or WcuAz or Creosote	- 0.76 -	- 0.83 -	16 or 4 or 115	16 or 5.4 or 115	30	15
				Telephone and street light	WCCA or WcuAz or Creosote	- 076 -	- 0.83 -	16 or 4 or 115	16 or 6.4 or 115	25	15
				Agricultural poles, landscaping structures, playground structures, building, fencing, pergolas, carports, flower boxes, vine and orchard trellises	WCCA or WcuAz or Creosote	- 0,42 -	- 0,5 -	12 or 2,5 or 100	12 or 3,3 or 100	20	13
				Posts (guard-rail)						Complete sapwood	Complete sapwood

1	2	3	4			5	6		7		8	
Hazard class	**Exposure class**	**Timber application**	**End use**			**Preservative type**	**Average net retention (assay zone) % m/m**		**Average net retention kg/m³**		**Minimum preservative penetration mm**	
							Soft-wood	**Hard-wood**	**Soft-wood**	**Hard-wood**	**Soft-wood**	**Hard-wood**
				Piling, agricultural poles for livestock pens		See hazard class H5						
			Sawn timber (and specified round wood products)	Sawn rectangular posts, landscaping structures, playground structures, building, fencing, pergolas, carports, flower boxes, decking, bridges		WCCA or WcuAz or Creosote	- 0,42 -	- - -	12 or 2,5 or 100	12 or - or 100	Complete sapwood	Complete sapwood
				Rail bearers							Complete sapwood or 20	Complete sapwood or 13
				General purpose poles							20	13
				Stakes, garden edging	Sawn	WCCA or WcuAz or Creosote	- 0,42 -	- - -	6 or 2,5 or 80	6 or - or 80	Complete sapwood	Complete sapwood
					Round	WCCA or WcuAz or Creosote	- 0,42 -	- 0,50 -	6 or 2,5	6 or 3,3 or 80	5	5
				Piling		See hazard class 5						
H3	Exterior above ground	Timber not in contact with the ground but exposed to leaching and weathering	Poles	Cross-arms and spacers		WCCA or WcuAz or Creosote	- 0,42 -	- 0,50 -	12 or 2,5 or 100	12 or 3,3 or 100	20	15
				Landscaping structures, playground structures, building, fencing rails, pergolas, carports, vine trellises		WCCA or WcuAz or Creosote	- 0,23 -	- 0,23 -	8 or 1,4 or 80	8 or 1,5 or 80	20	13
				Round droppers							10	10

1	2	3	4		5	6		7		8	
Hazard class	**Exposure class**	**Timber application**	**End use**		**Preservative type**	**Average net retention (assay zone) % m/m**		**Average net retention kg/m³**		**Minimum preservative penetration mm**	
						Soft-wood	**Hard-wood**	**Soft-wood**	**Hard-wood**	**Soft-wood**	**Hard-wood**
				Spacer blocks	WCCA or WcuAz or Creosote	- 0,23 -	- - -	8 or 1,4 or 80	8 or - or 80	Complete sapwood	Complete sapwood
			Sawn timber (and specified round wood products)	Balustrades, fencing bearers and sltas, out-door decking and beams, garden furniture, laminated beams, weather board, steps, cladding, stairs, gates, fascia board, plywood, sawn droppers, slabbed poles, cylindrical rals, half-rounds	WCCA or WcuAz or Creosote	- 0,23 -	- - -	8 or 1,4 or 80	8 or - or 80	Complete sapwood	Complete sapwood
				General purpose poles, machined poles for log homes						20	13
				Laths						5	5
H2	Internal	Timber used under a roof, not in contact with the ground, and that will not be exposed to leaching and weathering	Poles: Building structures, Roof trusses		WCCA or WcuAz or Creosote or TBTNP or Borate (boric acid equivalent)	- 0,23 - - - -	- 0,23 - - - -	8 or 1,2 or 80 or 1 or 1,3 Or 5	8 or 1,2 or 80 or 1 or 1,3 or 5	20	13
			Sawn timber (and specified round wood products)	Laminated beams, roof trusses, structural timber, ceiling board, flooring, panelling, doors, cupboards, skirting, window frames, plywood, slabed poles,	WCCA or WcuAz or Creosote or TBTNP or Borate	- 0,23 - - -	- - - - -	6 or 1,4 or 80 or 1 or 1,3	6 or - or 80 or 1 or 1,3	Complete sapwood	Complete sapwood

1	2	3	4		5	6		7		8	
Hazard class	**Exposure class**	**Timber application**	**End use**		**Preservative type**	**Average net retention (assay zone) % m/m**		**Average net retention kg/m³**		**Minimum preservative penetration mm**	
						Soft-wood	**Hard-wood**	**Soft-wood**	**Hard-wood**	**Soft-wood**	**Hard-wood**
				cylindrical rails, half-rounds	(boric acid equiva-lent)	-	-	or 5	or 5		
				General purpose poles, machined poles for log homes	WCCA or WcuAz or Creosote or TBTNP or Borate (boric acid equivalent)	- 0,23 - - - -	- - - - - -	6 or 1,2 or 80 or 1 or 1,3 or 5	6 or - or 80 or 1 or 1,3 or 5	20	13
				Laths						5	5
HO-i	Dry interior	Timber used under a roof, not in contact with the ground, exposed to insects other than termites, and not exposed to fungal attack or leaching and weathering	Sawn timber: Mouldings, ceilings, floor boards, joinery		Deltametrin	-	-	0,0003	0,003	Complete sapwood	Complete sapwood
HO-it	Dry interior	Timber used under a roof, not in contact with the ground, exposed to insects other than termites, and not exposed to fungal attack or leaching and weathering	Sawn timber: Mouldings, ceilings, floor boards, joinery		Deltametrin	-	-	0,01	0,01	Complete sapwood	Complete sapwood
NOTE - This table is for quick reference purposes only. Refer to the tables contained in latest official version of SANS 10005 when information is required on current requirements, and explanatory footnotes not contained in the above table.											

ANNEXURE E
ADDRESSES FOR RELEVANT PARTIES.

E.1 "Preservative Product" and treatment specifications

Construction Standards
South African Bureau of Standards
Private Bag X 191
Pretoria, 0001
South Africa
Tel: +27 12 428 7911
Fax: +27 12 344 1568

E.2 Product Certification

SABS Product Certification
Forestry, Timber and Fibre Department
Private Bag X 191
Pretoria, 0001
South Africa
Tel: +27 12 428 6262

South African Technical Auditing Services (SATAS)
Tel: +27 12 345 6646
Fax: 086 511 8524
Cell: 083 632 3416
stearsa@satas.co.za

E.3 Chemical registration

Department of Agriculture, Forestry and Fisheries
The Registrar – Act 36 of 1947
Private Bag X343
Pretoria
0001
Tel: +27 12 319 7910
Fax: +27 12 319 7179

E.4 For information regarding toxicity studies

Department of Health
Directorate: Environmental Health
Private Bag X 828
Pretoria, 0001
South Africa
Tel: +27 12 395 8781
Fax: +27 12 395 8802