



Certificate of constancy of performance

0099/CPR/A33/1135

In compliance with Construction Products Regulation 305/2011/EU of the European Parliament and of the Council, of 9 March 2011, the notified body AENOR (n. 0099) has issued this certificate to

CARTHAGE CEMENT

registered office	BLOC A LOT HSC 1-4-3 LES JARDINS DU LAC 1053 LES BERGES DU LAC II (Túnez)
Construction Product	Cement
Harmonised Standard	EN 197-1:2011
Cement	CEMI 42,5R
Production site	. MORNAG-BEN AROUS (Túnez)
Certification scheme	This certificate attests that all provisions under system 1+ concerning the assessment and verification of constancy of performance and the performances described in Annex ZA of the aforementioned harmonised standard are applied and that the product fulfils all the prescribed requirements set out above.

This certificate will remain valid until its validity date, provided that the test methods and/or factory production control requirements included in the harmonised standard, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly.

First issued on	2022-01-25
Last issued on	2023-01-25
Validity date	2024-01-25

Rafael GARCÍA MEIRO
Chief Executive Officer



DECLARATION DES PERFORMANCES

N° 0099 / CPR / A33 / 1135

1. Code d'identification unique du produit type:
Ciment Portland EN 197-1 – CEM I 42,5 R
2. Usage(s) prévus du produit de construction, conformément à la spécification technique harmonisée applicable, comme prévu par le fabricant :
Préparation de béton, mortier, coulis, etc.
3. Nom, raison sociale ou marque déposée et adresse de contact du fabricant, conformément à l'article 11, paragraphe 5 :
CARTHAGE CEMENT - Bloc A Lot HSC 1-4-3 Les Jardins du Lac 1053 Les Berges du Lac II
USINE: Mornag - Ben Arous - Tunis
4. Le cas échéant, nom et adresse de contact du mandataire dont le mandat couvre les tâches visées à l'article 12, paragraphe 2 :
Non applicable
5. Le(s) système(s) d'évaluation et de vérification de la constance des performances du produit de construction, conformément à l'annexe V :
System 1+
- 6a. Dans le cas de la déclaration des performances concernant un produit de construction couvert par une norme harmonisée :

Norme Harmonisée:

EN 197-1 (2011)

Organisme Notifié:

L'organisme notifié de certification du produit "AENOR" No. 0099 a attesté que toutes les dispositions du système 1+ concernant l'évaluation et la vérification de la constance des performances décrites à l'Annexe ZA de la norme harmonisée susmentionnée sont appliquées et que le produit satisfait à toutes les exigences énoncées ci-dessus.

7. Performances déclarées:

Caractéristiques essentielles		Performance	Spécifications Techniques Harmonisées
Ciments courants (sous-familles) constituant et composition		CEM I 42,5 R	EN 197-1:2011
Résistance à la compression	2 Jours	> 20 Mpa	
	28 jours	> 42,5 Mpa	
Temps de prise		Satisfait à l'exigence	
Résidu insoluble		Satisfait à l'exigence	
Teneur en SO3		Satisfait à l'exigence	
Perte au feu		Satisfait à l'exigence	
Stabilité - expansion		Satisfait à l'exigence	
Teneur en chlorure (Méthode alternative)		Satisfait à l'exigence	

8. Documentation technique appropriée et/ou documentation technique spécifique:

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Les performances du produit identifié aux points 1 et 2 sont conformes aux performances déclarées indiquées au point 7. Conformément au règlement (UE) n° 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant identifié au point 3.

Signé pour le fabricant et en son nom par:

CARTHAGE CEMENT

Bloc A Lot HSC 1-4-3 Les Jardins du Lac II - 1053 Tunis
Téléphone: +216 71 190 301 - Fax: +216 71 190 289
S.A. au capital de 172.134.413 DT

Le FABRICANT



CEMI 42.5R
2022

Chemical Characteristics

	CaO	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	K ₂ O	Na ₂ O	SO ₃	PF à 975°C
	%	%	%	%	%	%	%	%	%
Average	64.22	20.42	5.16	3.32	1.24	0.83	0.08	3.3	1.56
Deviation	0.83	0.59	0.16	0.2	0.13	0.13	0.05	0.17	0.39

Physical and Mechanical Characteristics

	SSB	R _{45μ}	D.PRISE	F.PRISE	RESISTANCE 2j	RESISTANCE 28j
	cm ² /g	%	mn	mn	MPa	MPa
Average	3298	10.88	142.8	182	27.82	51.02
Deviation	105	0.99	12.3	12.46	1.84	1.84

% Of Components

	Calcaire	Gypse	Clinker
	%	%	%
Average	2.03	5.35	92.64
Deviation	0.67	0.28	0.7

Quality Control Manager

CARTHAGE CEMENT
Mouna BEN JEMAA
Responsable Laboratoire



Date:26/01/2022

CONSTITUANTS CIMENT

Clinker	97,2%	Calcaire	2,79%
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CARACTIQUES PHYSIQUES ET MECANIQUES

Blaine	3260 g/cm ²	Refus sur tamis 45µm	10,29 %
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EXPENSION -PRISE

Expansion (mm): 0,7	Temps de début de prise(mn): 152	Temps de fin de prise (mn): 195
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Flexion (MPa)	
2J⁽¹⁾	28J⁽²⁾
4,6	7,8

Compression (Mpa)	
2J⁽¹⁾	28J⁽²⁾
27,14	52,9

CARACTERISTIQUES CHIMIQUES

SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO	SO ₃
19,87	5,27	3,09	64,72	1,99	3,01

K ₂ O	Cl	PF	CaO libre	RI	Cr ⁶⁺
0,7	0,01	1,81	1,38	0,61	1,8

(1):les résistances et les flexions de 2J sont celle du mois de Janvier 2022

(2):les résistances et les flexions de 28 J sont celle du mois de Decembre 2021

Le Responsable Contrôle Qualité

CARTHAGE CEMENT
Mouna BEN JEMAA
Responsable Laboratoire



Section 1 – Product Identification

Product Identifier

Product Name: Portland Cement Type I,II

Synonyms: CEM I / CEM II AL

Product Form: Solid / Powder

Intended Use of Product: Portland cement is used as a binder in combination with water and aggregates to form concrete. It is also used as a component of many masonry mortar and other building and construction materials.

Name, Address and Telephone of Responsible Party

CARTHAGE CEMENT

Lot HSC 1-4-3 Les Jardins du Lac – Les Berges du Lac 2
+21671190301

Emergency Contact Information:

CARTHAGE CEMENT :

+21671190301

Section 2 – Hazards Identification

Classification of the Substance or Mixture

Classification (GHS-US) This Material considered Hazardous by the OSHA hazard communication Standard (29CFR 1910.1200)
 Skin Corrosion/Irritation Category 1
 Serious Eye Damage /Eye Irritation Category 1
 Skin Sensitization Category 1
 Carcinogenicity /Inhalation Category 1A
 Specific Target Organ Toxicity: Single Exposure (Respiratory Tract Irritation) Category 3

Label Elements



Hazard Pictograms

Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage
 May cause an allergic skin reaction
 May cause respiratory irritation

Precautionary Statements

Prevention

Do not breathe dust.



Wear protective gloves/protective clothing/eye protection/face protection

Wash thoroughly after handling.

Do not handle until all safety precautions have been read and understood.

Response **If inhaled:** Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor.

If on skin: Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.

If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center/doctor.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/state/national regulations.

Other Hazards

Exposure may aggravate those with pre-existing eye, skin or respiratory conditions.

Section 3 – Composition/Information on Ingredients

Component/Ingredient	CAS #	Percent Present (Range)
Tricalcium silicate	12168-85-3	20 - 80
Dicalcium silicate	10034-77-2	5 - 40
Tetracalcium aluminoferrite	12068-35-8	5 - 15
Tri-calcium Aluminate	12042-78-3	1 - 15
Magnesium oxide	1309-48-4	0 - 5
Nuisance Dusts (Particulates not otherwise regulated)	None	< 1 - 5
Crystalline Silica (Quartz)	14808-60-7	0 - < 1

Other Components

Portland cement is made from materials mined from the earth and processed using energy provided by fuels. Additional materials, such as fly ash, kiln dust and slag may also be introduced into the manufacturing process. A chemical analysis of portland cement may reveal trace amounts of naturally occurring but potentially harmful chemical compounds such as free crystalline silica, organic compounds, calcium oxide, potassium and sodium compounds, heavy metals including cadmium, chromium (including hexavalent chromium), nickel and lead.

Section 4 – First Aid Measures

Description of First Aid Measures

Eyes Rinse eyes and under lids cautiously with clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin Remove contaminated clothing. Remove dry material from skin, but avoid creating dust. Wash with plenty of water. If skin irritation occurs, get immediate medical advice/attention.

Inhalation Remove person to fresh air away from dust and keep comfortable for breathing. If coughing persists, obtain medical attention.

Ingestion Do not induce vomiting. If subject is conscious, rinse the mouth with water to remove any material and drink plenty of water to dilute any swallowed material. Do not give drink or attempt to force water to an unconscious person. Get medical advice/attention.

Important Symptoms and Effects (Acute and Delayed)

Eyes Causes serious eye irritation and may scratch eye surface due to particle abrasion. May cause chemical burns resulting in corneal damage.



- Skin** Causes skin irritation if exposed to moisture on skin creating redness, dryness and itching. Extended exposure to wet material will result in chemical burns to skin, possibly severe.
- Inhalation** May irritate nose and throat if dust is inhaled. Prolonged or repeated inhalation of respirable dust may lead to respiratory tract or lung damage.
- Ingestion** May cause irritation and burns of mouth, throat, stomach and digestive tract if swallowed.

Recommendations for Immediate Medical Care or Special Treatment

Seek immediate medical attention for inhalation of large quantities of dust or exposure of wet material over large areas of skin. Seek immediate medical attention if material comes into contact with eyes and cannot be immediately removed.

Section 5 – Fire Fighting Measures

5.1 Special Hazard Arising From The substance or Mixture

Fire Hazard :Not considered Flammable but may burn at high Temperatures

Explosion Hazard : The product is not Explosive

5.2 Advice for Fire fighters

Protection during Firefighting : Do not enter fire area without proper protective equipment , including Respiratory Protection

Hazardous Combustion products : Silicon Oxides , Limestone decomposes at 825°C producing calcium and magnesium oxide .

Reference to other Sections

Refer to section 9 for Flammability Properties

Section 6 – Accidental Release Measures

6.1 personal Precautions , PPE and Emergency Procedures

General Measures : Do not breathe dust , Do not Get in eyes , or skin or on clothing , Do not handle Until all safety precautions have been read and understood .

For Non-Emergency Personnel :

PPE : Use appropriate personnel protective Equipment (PPE)

Emergency Procedures : Evacuate unnecessary Personnel.

For Emergency Personnel

PPE : Equip clean up crew with adequate protection

Emergency Procedures : First responder is expected to recognize the presence of dangerous goods, protect oneself and the public , secure the area , ventilate the area .

Section 7- Handling and Storage

7.1Precautions for Safe Handling

Additional Hazards when proceed : May release corrosive vapors .cutting , crushing or grinding cement clinker , hardened cement , concrete or other crystalline silica-bearing materials will release respirable crystalline silica .Use adequate measure of dust control and PPE.

Precautions for Safe Handling : Wash your hands and other exposed areas with mild soap and water before eating , drinking or smoking and when leaving work.Avoid contact with eyes ,skin and clothing .Do not get in eyes , on skins or on clothing .

Handling Temperature : Unlimited

Hygiene Measures : Handle according to Industrial hygiene and Safety Procedures



Conditions of Safe storage , including Any Incompatibilities

Technical Conditions : Comply with applicable regulations

Storage Conditions : Store in original container or corrosive resistant and/or Lined Container

Incompatibel Materials : Acid , Ammonium salts and aluminuim metals. Cement Dissolve in hydrofluoric acid , producing corrosive tetrafluoride gas .Cement react with water to form silicates and calcium hydroxide .silicates react with powerful oxidizers such as fluorine , boron trifluoride , chlorine trifluoride , manganese trifluoride an oxygen difluoride.

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Tricalcium silicate	15 mg/m3 (T); 5 mg/m3 (R)	Not listed	10 mg/m3 (T); 5 mg/m3 (R)
Dicalcium silicate	15 mg/m3 (T); 5 mg/m3 (R)	Not listed	10 mg/m3 (T); 5 mg/m3 (R)
Tetracalcium aluminoferrite	15 mg/m3 (T); 5 mg/m3 (R)	Not listed	10 mg/m3 (T); 5 mg/m3 (R)
Tri-calcium aluminate	15 mg/m3 (T); 5 mg/m3 (R)	Not listed	10 mg/m3 (T); 5 mg/m3 (R)
Magnesium oxide	15 mg/m3	10 mg/m3 (I)	Not established
Nuisance Dusts (PNOR)	15 mg/m3 (T); 5 mg/m3 (R)	10 mg/m3	Not established
Crystalline Silica (Quartz)	10 mg/m3 (R) /(% SiO2 + 2) 30 mg/m3 (T) /(% SiO2 + 2)	0.025 mg/m3 (R)	0.05 mg/m3 (R)

Exposure Limits for Individual Components (T= Total Respirable, R=Respirable fraction, I=Inhalable-aerosol)

Exposure Controls

Engineering Controls

Use outdoors in well-ventilated areas; otherwise employ natural or mechanical ventilation to maintain exposure within applicable limits.

wear respiratory protection.



Personal Protection Avoid contact with skin or eyes. Avoid creating or breathing

Face and Eyes Safety glasses with side shields or protective goggles should be worn product. For extremely dusty conditions, non-vented goggles or goggles with indirect venting are recommended. Avoid contact lens wear when using this product.

Body Long sleeved shirts and trousers should be worn while using this material. Wear water- proof boots. If working in dusty conditions, impervious over garments are recommended.

Respiratory If exposure levels cannot be maintained below acceptable limits, suitable particulate- filtering facemasks or respirators approved by MSHA/NIOSH should be worn in accordance with the user's respiratory protection program and OSHA/MSHA guidelines.

Hands Protective gloves with wrist/arm cuffs should be worn to avoid direct contact with skin



Section 8 – Physical and Chemical Properties

Physical State	Solid, granules or lumps	Specific Gravity	3.1 – 3.2
Appearance & Color	Dark grey – black nodules	Flash Point/Method	None. Not flammable.
Odor	None	Auto Ignition Temperature	Not determined
pH	>12 (in water)	Lower Flammability Limit	Not applicable
Boiling Point	Not applicable	Upper Flammability Limit	Not applicable
Solubility (Water)	Negligible (< 1%)	Octanol/H₂O Coefficient	Not determined
Evaporation Rate	Not applicable	Viscosity	Not applicable
Melting Point	Not determined	Freezing Point	Solid at room temperature
Vapor Density	Not applicable	Explosion Risk: Static	Not considered a hazard
Vapor Pressure	Not applicable	Explosion Risk: Shock	Not considered a hazard

Section 9 – Stability and Reactivity

Reactivity	Reacts with water to create heat and calcium hydroxide.
Chemical Stability	Stable at standard temperature and pressures.
Hazardous Reactions	None. Hazardous polymerization will not occur.
Conditions to Avoid	Moisture or wetting will cause exothermic heating as product cures.
Incompatible Materials	Avoid contact with strong acids, oxidizers, aluminum and ammonium salts.
Decomposition Hazards	Reacts with water to form calcium hydroxide which can irritate/damage skin. Clinker dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas.

Product: Portland cement clinker

Acute Toxicity	Not classified.
LD50/LC50 Data	Not classified.
Skin Corrosion/Irritation	Causes irritation or chemical burns if exposed to moisture on skin.
Critical Eye Damage/Irritation	Causes serious eye injury due to chemical burns or mechanical irritation.
Respiratory or Skin Sensitization	Not reported/no data available.
Germ Cell Mutagenicity	Not reported/no data available.
Teratogenicity	Not reported/no data available.
Carcinogenicity	Material may contain trace amounts of crystalline silica, which may cause lung cancer through repeated or prolonged exposure to dust.
Specific Organ Toxicity (Single Exposure)	Not reported/no data available.
Specific Organ Toxicity (Repeated Exposure)	May cause damage/disease to lungs through repeated or prolonged exposure.
Reproductive Toxicity	Not reported/no data available.
Aspiration Respiratory Hazard	Not reported/no data available.
Symptoms: Inhalation	Coughing, sneezing, mucous discharge and dyspnea. Extended contact may lead to chemical burns.
Symptoms: Skin Contact	Redness and itching. Extended contact may lead to chemical burns.
Symptoms: Eye Contact	Redness and itching. Extended contact may lead to corneal abrasion/ulceration.
Symptoms: Ingestion	Irritation and chemical burns of mouth and throat.
Other Toxicological Information	No additional data available.



Components	Toxicity	Carc: IARC	Carc: NTP	Carc: OSHA
Tricalcium silicate		No data		Not listed
Dicalcium silicate		No data		Not listed
Tetracalcium aluminoferrite		No data		Not listed
Tri-calcium Aluminate		No data		Not listed
Magnesium oxide		Oral LD50 Rat 810 mg/kg		Not listed
Nuisance Dusts (PNOR)		No data		Not listed
Crystalline Silica (Quartz) (refer to Section 16 for more information)		Oral LD50 Rat >22,500 mg/kg LC50 Carp >10,000 mg/L (72 hr)	Group 1	Known

10 – Ecological Information

General Ecotoxicity	Not classified.
Persistence and Degradability	Not reported/no data available.
Bioaccumulation Potential	Not reported/no data available.
Mobility in Soil to Groundwater	Not reported/no data available.
Environmental Fate	Not reported/no data available.
Other Environmental	
Precautions or Information	

11 – Disposal Considerations

Disposal Methods	Dispose as an inert, non-metallic mineral in accordance with applicable federal, state, and local regulations.
Special Considerations	Avoid creation or breathing dust during disposal. Avoid contact with skin and eyes.
Other Disposal Information	Prevent material from entering sewers, drains, ditches or waterways.

12 – Transport information

Proper Shipping Name	N/A – not regulated.
Hazard Class	N/A – not regulated. UN
Shipping ID Number	N/A – not regulated.
Packing Group	N/A – not regulated.
Environmental/IMDG Codes	N/A – not regulated.



Section 13 – Regulatory Information

Federal

This product contains one or more chemical components or ingredients that may require identification and/or reporting under SARA Section 302, SARA Section 311/312/313, CERCLA and/or TSCA. An examination of the components of this product should be conducted by a qualified environmental professional to determine if such identification or reporting is required by federal law. □
Components: Magnesium oxide, Silica (Crystalline)

State

This product contains one or more chemical components or ingredients that are included or listed on the hazardous substances lists for one or more of the following states: California, Maine, Minnesota, New Jersey, Pennsylvania and Rhode Island. An examination of the components of this product should be conducted by a qualified environmental or safety and health professional to determine the specific requirements for those states.

- Components: Magnesium oxide, Silica (Crystalline)

The state of California requires the following statement (Proposition 65) in regards to this material:

- WARNING! This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

Section 14 – Other Information

Additional information regarding portland cement products:

Wet portland cement products can cause caustic burns to unprotected skin, sometimes referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, these burns may extend to the bone and cause disfiguring scars or disability.

Employees cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time an employee becomes aware of a cement burn, much damage has already been done. Accordingly, the safest method to use portland cement products is to avoid contact with exposed skin completely. Cement burns can get worse even after skin contact with cement has ended. Any employee experiencing a cement burn is advised to see a health care professional immediately.

Skin contact with wet portland cement products can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Contact with wet portland cement products can cause a non-allergic form of dermatitis (called irritant contact dermatitis) which is related to the caustic, abrasive, and drying properties of portland cement.

In addition, hexavalent chromium [Cr(VI)] which may be found in portland cement products in trace amounts, can cause an allergic form of dermatitis (allergic contact dermatitis, or ACD) in sensitized employees who work with the wet material. When an employee is sensitized, that person's immune system overreacts to small amounts of Cr(VI), which can lead to severe inflammatory reactions upon subsequent exposures. Sensitization may result from a single Cr(VI) exposure, from repeated exposures over the course of months or years, or it may not occur at all. After an employee becomes sensitized, brief skin contact with very small amounts of Cr(VI) can trigger ACD. ACD is long-lasting and employees can remain sensitized to Cr(VI) years after their exposure to portland cement has ended. Medical tests (e.g. skin patch tests) are available that can confirm whether an employee has become dermally sensitized to Cr(VI).



Employees who work with Portland cement products and experience skin problems, including seemingly minor ones, are advised to see a health care professional for evaluation and treatment. In cement-related dermatitis, early diagnosis and treatment can help prevent chronic skin problems.

Additional information regarding crystalline silica:

The major concern is silicosis, caused by the inhalation and retention of respirable (extremely small) crystalline silica dust particles. Silicosis can exist in several forms. Chronic or ordinary silicosis (often referred to as simple silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low concentrations of airborne respirable crystalline silica dust. Complicated silicosis or progressive massive fibrosis (PMF) may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease. Acute silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis can be fatal.

IARC: The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs."

NTP: The National Toxicology Program (NTP), in its Thirteenth Annual Report on Carcinogens, classified "silica, crystalline (respirable)" as a known human carcinogen.

OSHA: Crystalline silica (quartz) is not regulated as a human carcinogen by the Occupational Safety and Health Administration.

Other important information:

While the information provided in this document is believed to provide a useful summary of the hazards of portland cement, the information in this document cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product.

The data furnished in this document do not address hazards that may be posed by other materials when mixed with portland cement. Users should review other relevant safety data sheets before working with this product.

The information presented in the Safety Data Sheet is based on current knowledge and publications and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be interpreted as guaranteeing any specific property of the product.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Zd'Ded, EXCEPT THAT THE PRODUCT SHALL CONFORM TO CONTRACTED SPECIFICATIONS.

--END OF SAFETY DATA
SHEET--

