Environmental Product Declaration

According to EN15804+A2 (+indicators A1)

This declaration is for:

ONE-DNA Play

Provided by:

LimeGreen

program operator

Stichting MRPI®

publisher

Stichting MRPI®

www.mrpi.nl

MRPI® registration

1.1.00540.2024

date of first issue

18-4-2024

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expiry date

18-4-2029

COMPANY INFORMATION

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MRPI® REGISTRATION

1.1.00540.2024

DATE OF ISSUE

18-4-2024

EXPIRY DATE

18-4-2029

PRODUCT

ONE-DNA Play

DECLARED UNIT/FUNCTIONAL UNIT

m2

DESCRIPTION OF PRODUCT

ONE-DNA™ PLAY is mono-material artificial grass manufactured by LimeGreen Holding BV.. Applied as a top layer carpet for Playgrounds and Multi-sport fields.

VISUAL PRODUCT

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Ulbert Hofstra SGS Intron B.V. The LCA study has been done Stijn Mulder, EcoReview NL B.V. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

MORE INFORMATION

https://one-dna.com/nl/one-dna-play/

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

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Managing Director MRPI

DEMONSTRATION OF VERIFICATION
CEN standard EN15804 serves as the core PCR(a)
Independent verification of the declaration an data according to EN15804+A2 (+indicators A1) internal: external: x
Third party verifier: Ulbert Hofstra, SGS Intron B.V.
[a] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

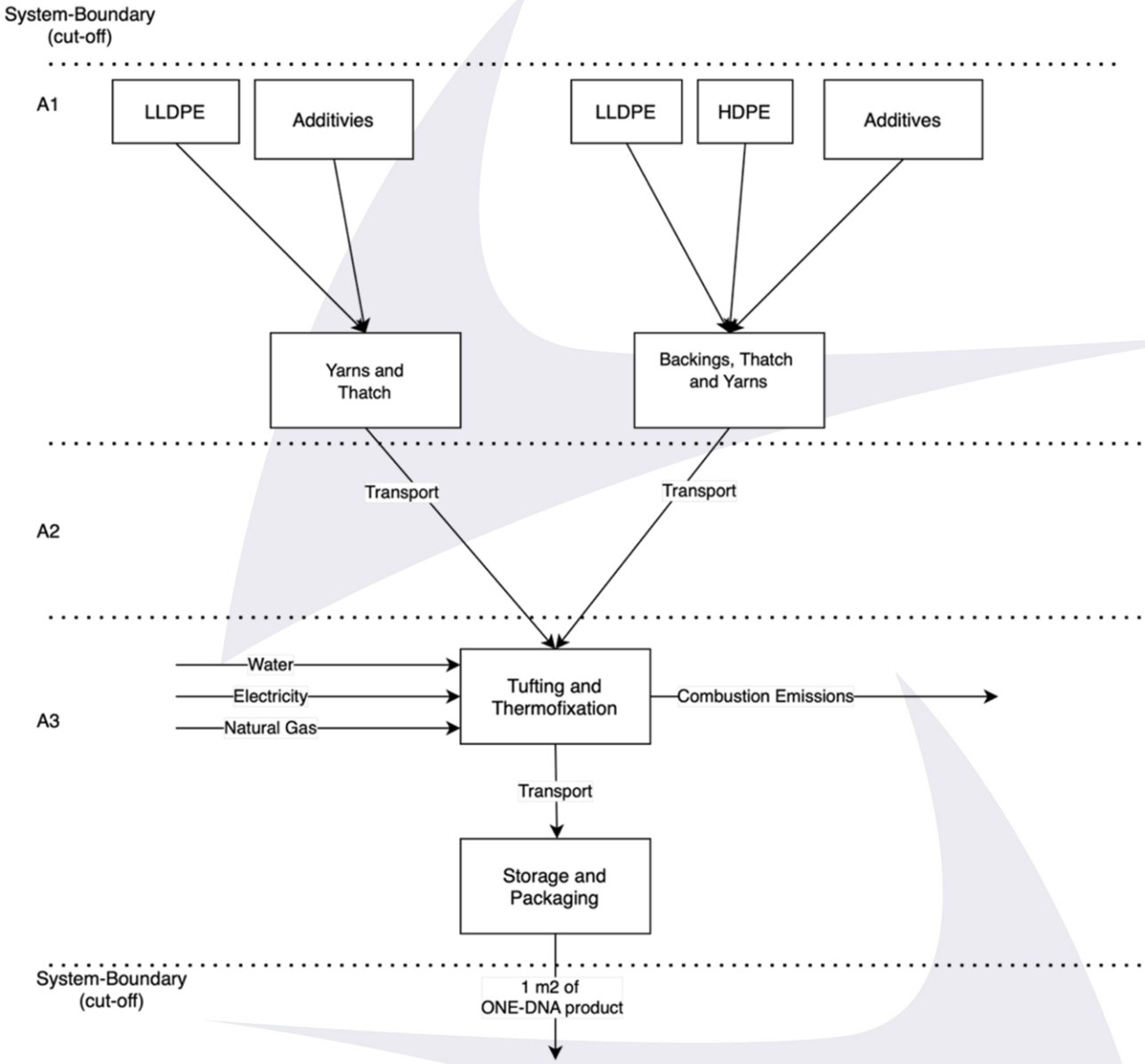
ONE-DNA™ PLAY is mono-material artificial grass manufactured by LimeGreen Holding BV., developed with a focus on preserving end-of-life value, minimizing resource use, reducing CO2 emissions, and maximizing recyclability. Applied as a top layer carpet for Playgrounds and Multi-sport fields. ONE-DNA™PLAY has a pile height of 24 mm and a specific weight of 1512 gr/m2.

Component (> 1%)	(%)
PE	99,7%

SCOPE AND TYPE

The LCA is a cradle-to-gate LCA (A1-A3) in accordance with the EN15804+A2 and the Dutch Determination method (Bepalingsmethode 'Milieuprestatie Bouwwerken' versie 1.1 march 2022). The product is produced in the Netherlands and application of the results is only representable for products sold form the Hasselt facility. All packaging is included in this LCA and processing of production wastes is modelled for the region where they ocur. Simapro 9.5.0.0 software was using the NMD 3.8 and EcoInvent 3.6 databases.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USER STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery – Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X														
X= Modules Assessed ND= Not Declared																



REPRESENTATIVENESS

ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	3,78 E-05	3,32 E-07	7,99 E-06	4,61 E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	MJ	1,03 E+02	1,98 E-01	6,74 E+00	1,10 E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP	kg CO2 eq.	3,14 E+00	1,30 E-02	6,93 E-01	3,85 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	Kg CFC11 eq.	1,05 E-07	2,30 E-09	3,46 E-08	1,42 E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	Kg ethene eq.	2,57 E-03	7,83 E-06	2,19 E-04	2,80 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	kg SO2 eq.	1,01 E-02	5,71 E-05	2,02 E-03	1,21 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP	kg (PO4) 3- eq.	9,87 E-04	1,12 E-05	2,73 E-03	3,73 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Toxicity indicators for Dutch market

HTP	kg DCB-Eq	7,65 E-01	5,47 E-03	2,81 E-01	1,05 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FAETP	kg DCB-Eq	1,55 E-02	1,60 E-04	2,64 E-02	4,21 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAETP	kg DCB-Eq	4,91 E+01	5,74 E-01	3,02 E+01	7,99 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETP	kg DCB-Eq	7,80 E-03	1,93 E-05	4,95 E-03	1,28 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ECI	euro	2,94 E-01	1,56 E-03	9,77 E-02	3,93 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	kg Sb eq.	4,95 E-02	9,55 E-05	3,24 E-03	5,28 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources expressed in [kg Sb-eq.]

ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	3,25 E+00	1,31 E-02	7,72 E-01	4,04 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-fossil	kg CO2 eq.	3,26 E+00	1,31 E-02	7,02 E-01	3,97 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-biogenic	kg CO2 eq.	-6,83 E-03	6,04 E-06	6,87 E-02	6,19 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-luluc)	kg CO2 eq.	1,20 E-03	4,80 E-06	1,30 E-03	2,50 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	1,07 E-07	2,89 E-09	3,73 E-08	1,47 E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	mol H+ eq.	1,21 E-02	7,59 E-05	2,58 E-03	1,48 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-freshwater	kg PO4 eq.	6,14 E-05	1,32 E-07	2,06 E-04	2,67 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg N eq.	2,08 E-03	2,68 E-05	4,37 E-03	6,47 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol N eq.	2,36 E-02	2,95 E-04	5,88 E-03	2,97 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg NMVOC eq.	1,03 E-02	8,42 E-05	1,30 E-03	1,17 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals	kg Sb eq.	3,78 E-05	3,32 E-07	7,95 E-06	4,61 E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil	MJ, net calorific value	1,02 E+02	1,97 E-01	6,41 E+00	1,09 E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WDP	m3 world eq. Deprived	5,17 E+00	7,06 E-04	9,76 E-01	6,15 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GWP-total = Global Warming Potential total
GWP-fossil = Global Warming Potential fossil fuels
GWP-biogenic = Global Warming Potential biogenic
GWP-luluc = Global Warming Potential land use and land use change
ODP = Depletion potential of the stratospheric ozone layer
AP = Acidification Potential, Accumulated Exceedence
EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
POCP = Formation potential of tropospheric ozone photochemical oxidants
ADP-minerals&metals = Abiotic Depletion Potential for non fossil resources [2]
ADP-fossil = Abiotic Depletion for fossil resources potential [2]
WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

Disclamer [2]
- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

ENVIRONMENT IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	1,01 E-07	1,18 E-09	2,74 E-08	1,30 E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	6,84 E-02	8,27 E-04	1,80 E-02	8,73 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	2,70 E+01	1,76 E-01	8,61 E+01	1,13 E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	1,20 E-09	5,71 E-12	1,01 E-09	2,21 E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	2,54 E-08	1,93 E-10	2,73 E-08	5,29 E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	----	8,90 E+00	1,71 E-01	1,32 E+00	1,04 E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PM = Potential incidence of disease due to PM emissions
IRP = Potential Human exposure efficiency relative to U235 [1]
ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
HTP-c = Potential Comparative Toxic Unit for humans [2]
HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
SQP = Potential soil quality index [2]

Disclamer [1]
- This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle.
It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste.

Disclamer [2]
- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	3,07 E-05	5,00 E-07	3,88 E-05	7,00 E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NHWD	kg	1,60 E-01	1,25 E-02	1,34 E-01	3,06 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWD	kg	6,17 E-05	1,30 E-06	1,60 E-05	7,89 E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CRU	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MFR	kg	2,33 E-03	0,00 E+00	6,83 E-05	2,40 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MER	kg	1,87 E-04	0,00 E+00	5,26 E-06	1,92 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EEE	MJ	6,27 E-03	0,00 E+00	1,96 E-04	6,47 E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETE	MJ	1,08 E-02	0,00 E+00	3,37 E-04	1,11 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

HWD = Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
MFR = Materials for recycling
EEE = Exported Electrical Energy
NHWD = Non Hazardous Waste Disposed
CRU = Components for reuse
MER = Materials for energy recovery
ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	5,71 E-02	0,00 E+00	1,90 E-03	5,90 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERT	MJ	2,07 E+00	2,47 E-03	6,80 E-01	2,75 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRE	MJ	3,49 E-01	0,00 E+00	1,63 E-01	5,12 E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRT	MJ	1,10 E+02	2,10 E-01	6,91 E+00	1,17 E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SM	kg	6,65 E-04	0,00 E+00	1,96 E-05	6,85 E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FW	m3	6,25 E-02	2,40 E-05	2,51 E-02	8,76 E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PERE = Use of renewable energy excluding renewable primary energy resources
PERM = Use of renewable energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total use of non-renewable primary energy resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NRSF = Use of non renewable secondary fuels
FW = Use of net fresh water

BIOGEEN CARBON CONTENT per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	Kg C	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BCCpa	kg C	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

Energy and resource usage of the production facilities have been mass allocated based on a full calendar year of production. Capital goods, such as factory infrastructure, have been cut-off.

SENARIOS AND ADDITIONAL TECHNICAL INFORMATION

The yarns, thatch and backings for the ONE-DNA artificial turf are produced in Dubai and in the Netherlands. The composition and production of these half-fabricates are inventoried for this study. At the production location in Hasselt these half-fabricates are tufted and thermally fixed to the backing. From the production locations the product is packed and shipped to the customer.

DECLARATION OF SVHC

Analysis show no SVHC present in the product.

REFERENCES

None.

REMARKS

None.