

TRIISOPROPANOLAMINE PURE

Version: 10.01

Revision Date 18.08.2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**

Trade name	TRIISOPROPANOLAMINE PURE
INCI	Triisopropanolamine
REACH No.	01-2119475482-34-0002
Substance name (REACH / CLP)	1,1',1''-nitritotripropan-2-ol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use	Industrial use raw material for synthesis processes in the chemical industry anti-corrosion agent
Uses advised against	

1.3 Details of the supplier of the safety data sheet

Company	SASOL Germany GmbH Anckelmannsplatz 1 20537 Hamburg Telephone: +49 40 63684-1000 Telefax: +49 40 63684-3700
Information (Product safety):	Telephone: + 49 (0) 23 65 - 49 47 05 Telefax: + 49 (0) 23 65 - 49 92 40
E-mail address	msds-info.germany@de.sasol.com

1.4 Emergency telephone number

Emergency telephone number	+ 49 (0) 23 65 - 49 22 32
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SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Serious eye damage Category 1 Causes serious eye damage.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)****Hazard pictograms****Signal word**

Danger

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Hazard statements

H318

Causes serious eye damage.

Precautionary statements

P280

Wear eye protection/ face protection.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

2.3 Other hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES**1,1',1''-Nitrilotripropan-2-ol****content:** >= 90 - <= 100 %**component type:** Active ingredient**EC-No.:** 204-528-4**Index-No.:** 603-097-00-3**CAS-No.:** 122-20-3**REACH No.:** 01-2119475482-34-0002**Substance name (REACH / CLP):** 1,1',1''-nitrilotripropan-2-ol**Classification (Regulation (EC) No 1272/2008):** Eye Dam. 1 H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****General advice**

If you feel unwell, seek medical advice (show the label where possible). Take off all contaminated clothing immediately.

If inhaled

Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Monitor breathing, give oxygen if necessary. Consult a physician.

In case of skin contact

Wash off with plenty of water.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Consult a physician. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed**Most important symptoms and effects, both acute and delayed**

Symptoms: No information available.

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4.3 Indication of any immediate medical attention and special treatment needed**Indication of any immediate medical attention and special treatment needed**

Treatment: Call a physician immediately.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**Water spray, Dry powder, Foam, Carbon dioxide (CO₂)**5.2 Special hazards arising from the substance or mixture****Specific hazards during firefighting**In case of fire hazardous decomposition products may be produced such as: Nitrogen oxides (NO_x)**5.3 Advice for firefighters****Special protective equipment for firefighters**

In the event of fire, wear self-contained breathing apparatus.

Further information

Standard procedure for chemical fires.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

Use personal protective equipment.

6.2 Environmental precautions**Environmental precautions**

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up**Methods for cleaning up**

Use mechanical handling equipment.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling****Advice on safe handling**

Wear personal protective equipment.

Advice on protection against fire and explosion

No special protective measures against fire required.

7.2 Conditions for safe storage, including any incompatibilities**Requirements for storage areas and containers**

Keep container tightly closed.

Storage class (TRGS 510)

11: Combustible Solids

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container material

unsuitable materials: Light metals, Copper

7.3 Specific end use(s)

Specific use(s)

This information is not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

National occupational exposure limits

Control parameters / Substance name	Type	Control parameters	Update	Basis
TRIIISOPROPANOLAMINE	ST ESL	400	02 2013	TX ESL
TRIIISOPROPANOLAMINE	AN ESL	40	02 2013	TX ESL

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

No data available

DERIVED NO EFFECT LEVEL (DNEL)

Substance name: 1,1',1"-nitriлотрипропан-2-ол			
End Use	Exposure routes	Value	Note
Workers	dermal, Acute/short-term exposure - systemic effects		Not relevant / not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / not applicable
	dermal, long-term exposure - systemic effects	50 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	86 mg/m3	
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects	10 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		Not relevant / not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / not applicable
	Oral, Acute/short-term exposure - systemic effects		Not relevant / not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / not applicable
	Inhalation, Acute/short-term exposure -		Not relevant / not applicable

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	local effects		
	dermal, long-term exposure - systemic effects	50 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	21 mg/m3	
	Oral, long-term exposure - systemic effects	9,7 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects	10 mg/m3	

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: 1,1',1"-nitrilotripropan-2-ol		
Environmental Compartment	Value	Note
Fresh water	0,71 mg/l	
Marine water	0,071 mg/l	
intermittent release	7,1 mg/l	
treatment plant	2,26 mg/l	
Fresh water sediment	41,5 mg/kg	based on dry weight
Marine sediment	41,5 mg/kg	based on dry weight
Soil	7,85 mg/kg	based on dry weight
food		Not relevant / not applicable

8.2 Exposure controls

ENGINEERING MEASURES

Provide sufficient air exchange and/or exhaust in work rooms.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection

No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a combined filter (e.g. A-P2 or ABEK-P2), in compliance with EN 141.

Hand protection

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

gloves suitable for permanent contact:

Material: Nitrile rubber/nitrile latex
Break through time: >= 480 min
Layer thickness: 0,35 mm

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Material: butyl-rubber
Break through time: ≥ 480 min
Layer thickness: 0,5 mm

Eye protection	Tightly fitting safety goggles
Skin and body protection	Protective suit
Hygiene measures	Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feedingstuffs. Wear suitable gloves and eye/face protection.
Protective measures	Avoid contact with eyes. Wear suitable gloves and eye/face protection.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	Should not be released into the environment.
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Physical state	solid; 20 °C; 1.013 hPa
Form	solid
Colour	white
Odour	slight, ammoniacal
Odour Threshold	No data available
pH	ca. 11; 20 g/l; 20 °C
Melting point/range	59 °C; product tends towards supercooling
Boiling point/boiling range	309 °C; 1.013 hPa; Thermal decomposition
Flash point	ca. 170 °C; DIN 51758
Evaporation rate	Not relevant / not applicable Justification: Solid
Flammability (solid, gas)	No data available
Lower explosion limit	0,8 %(V)
Upper explosion limit	5,8 %(V)
Vapour pressure	< 0,01 hPa; 20 °C
Relative vapour density	No data available
Density	ca. 1,01 g/cm ³ ; 30 °C
Relative density	No data available
Water solubility	completely soluble
Partition coefficient: n-octanol/water	log Pow: -0,819; (calculated)
Ignition temperature	ca. 290 °C; DIN 51794

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Auto-ignition temperature	not auto-flammable
Viscosity, dynamic	No data available
Explosive properties	not expected based on structure and functional groups
Oxidizing properties	No data available

9.2 Other data

None known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note Stable under recommended storage conditions.

10.2 Chemical stability

Note No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid Direct heating, dirt, chemical contamination, sunlight, UV or ionising radiation.

10.5 Incompatible materials to avoid

Materials to avoid Oxidizing agents; Acids

10.6 Hazardous decomposition products

Hazardous decomposition products methane
Hydrogen
propene
No decomposition if stored normally.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects**Acute toxicity**

Acute oral toxicity 1,1',1''-Nitrilotripropan-2-ol:
LD50 Rat: > 2.000 mg/kg
(literature value)
Based on available data, the classification criteria are not met.

Acute dermal toxicity 1,1',1''-Nitrilotripropan-2-ol:
LD50 Rabbit: > 2.000 mg/kg;
(literature value)
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

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Skin irritation	1,1',1''-Nitrilotripropan-2-ol: Rabbit: not irritating; OECD Test Guideline 404 Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	
Eye irritation	1,1',1''-Nitrilotripropan-2-ol: Rabbit: Irreversible effects on the eye; OECD Test Guideline 405 Causes serious eye damage.
Respiratory or skin sensitisation	
Sensitisation	1,1',1''-Nitrilotripropan-2-ol: Patch-Test Guinea pig: not sensitizing (literature value) Based on available data, the classification criteria are not met.
Germ cell mutagenicity	
Genotoxicity in vitro	1,1',1''-Nitrilotripropan-2-ol: Ames test; Salmonella typhimurium; with and without metabolic activation: not mutagenic (literature value) 1,1',1''-Nitrilotripropan-2-ol: Chromosome aberration test in vitro; other mammalian peripheral blood lymphocytes; with and without metabolic activation: negative; OECD Test Guideline 473 (literature value) 1,1',1''-Nitrilotripropan-2-ol: Mammalian cell gene mutation assay; Chinese hamster ovary cells; with and without metabolic activation; OECD Test Guideline 476 (literature value)
Genotoxicity in vivo	1,1',1''-Nitrilotripropan-2-ol: In vivo tests did not show mutagenic effects (literature value)
Remarks	1,1',1''-Nitrilotripropan-2-ol: Based on available data, the classification criteria are not met.
Carcinogenicity	
Carcinogenicity	1,1',1''-Nitrilotripropan-2-ol: The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential. Based on available data, the classification criteria are not met. (literature value)
Reproductive toxicity	
Reproductive toxicity	1,1',1''-Nitrilotripropan-2-ol: Based on available data, the classification criteria are not met. (literature value)
STOT - single exposure	
Remarks	1,1',1''-Nitrilotripropan-2-ol: Based on available data, the classification criteria are not met.
STOT - repeated exposure	
Remarks	1,1',1''-Nitrilotripropan-2-ol: Based on available data, the classification criteria are not met.
Repeated dose toxicity	1,1',1''-Nitrilotripropan-2-ol: Dog; Oral; Subchronic toxicity NOAEL: 272 mg/kg (based on body weight and day)

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(literature value)

1,1',1''-Nitrilotripropan-2-ol:
Rat; Dermal; 28-day
NOAEL: 3.000 mg/kg (based on body weight and day)
(literature value)

Aspiration hazard**Aspiration toxicity**

1,1',1''-Nitrilotripropan-2-ol:
Not applicable

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity****Toxicity to fish**

1,1',1''-Nitrilotripropan-2-ol:
LC50 (96 h) Cyprinus carpio (Carp): > 100 mg/l ; semi-static test; OECD Test Guideline 203

Toxicity to fish - Chronic toxicity

1,1',1''-Nitrilotripropan-2-ol:
The study is not necessary.

Toxicity to daphnia and other aquatic invertebrates

1,1',1''-Nitrilotripropan-2-ol:
EC50 (48 h) Daphnia magna (Water flea): > 100 mg/l ; static test; OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity

1,1',1''-Nitrilotripropan-2-ol:
The study is not necessary.

Toxicity to aquatic plants

1,1',1''-Nitrilotripropan-2-ol:
EC50 (72 h) Desmodesmus subspicatus (green algae): > 100 mg/l ; static test; OECD Test Guideline 201; (literature value)

Toxicity to bacteria

1,1',1''-Nitrilotripropan-2-ol:
EC50 (30 min) activated sludge, industrial: > 1.000 mg/l; Respiration inhibition; ISO 8192
(literature value)
The substance is not to be considered to be inhibitory to bacteria.

Toxicity to soil dwelling organisms

1,1',1''-Nitrilotripropan-2-ol:
The study is not necessary.
Justification:
Not expected to adsorb on soil.
The substance and its relevant degradation products decompose rapidly.

Toxicity to terrestrial flora

1,1',1''-Nitrilotripropan-2-ol:
The study is not necessary.
Justification:
Not expected to adsorb on soil.
The substance and its relevant degradation products decompose rapidly.

12.2 Persistence and degradability**Biodegradability**

1,1',1''-Nitrilotripropan-2-ol:
Not readily biodegradable.; < 70 %; 28 d; aerobic; OECD Test Guideline 301A

12.3 Bioaccumulative potential**Bioaccumulation**

1,1',1''-Nitrilotripropan-2-ol:
Cyprinus carpio (Carp); 42 d; Bioconcentration factor (BCF): < 1; OECD Test Guideline 305C

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Bioaccumulation is unlikely.
(literature value)

12.4 Mobility in soil**Mobility**

1,1',1''-Nitrilotripropan-2-ol:
Mobile in soils
Not expected to adsorb on soil.
(literature value)

12.5 Results of PBT and vPvB assessment**Results of PBT assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Results of PBT assessment

1,1',1''-Nitrilotripropan-2-ol:
Based on available data, the classification criteria are not met.

12.6 Other adverse effects**General advice**

1,1',1''-Nitrilotripropan-2-ol:
None known.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Can be incinerated, when in compliance with local regulations.

waste code of the European Union: EWC

The waste code must be determined in agreement with the regional waste disposal authority or company. A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose.

SECTION 14: TRANSPORT INFORMATION**14.1 UN number****ADR**

Not dangerous goods

RID

Not dangerous goods

ADN

Not dangerous goods

IMDG

Not dangerous goods

ICAO/IATA

Not dangerous goods

14.2 Proper shipping name**ADR**

Not dangerous goods

RID

Not dangerous goods

ADN

Not dangerous goods

IMDG

Not dangerous goods

ICAO/IATA

Not dangerous goods

14.3 Transport hazard class**ADR**

Not dangerous goods

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RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.4 Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
ICAO/IATA	Not dangerous goods

14.5 Environmental hazards

ADR	Environmentally hazardous	no
RID	Environmentally hazardous	no
ADN	Environmentally hazardous	no
IMDG	Marine pollutant	no
ICAO/IATA	Environmentally hazardous	no

14.6 Special precautions for user

Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship type	3
Pollution category	Z
Remarks	MARPOL NAME: Triisopropanolamine

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Occupational restrictions	Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.
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NATIONAL/OTHER REGULATIONS

Legislation on the control of major-accident hazards involving dangerous substances	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. list entry in the directive:: Not applicable
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NOTIFICATION STATUS

Switzerland. Consolidated Inventory	CH INV	listed (product or constituents are listed)
US. Toxic Substances Control Act	TSCA	listed (product or constituents are listed)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	DSL	listed (product or constituents are listed)
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	listed (product or constituents are listed)
Japan. Kashin-Hou Law List	ENCS (JP)	listed (product or constituents are listed)
Japan. Industrial Safety & Health Law (ISHL) List	ISHL (JP)	listed (product or constituents are listed)
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	listed (product or constituents are listed)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	listed (product or constituents are listed)
China. Inventory of Existing Chemical Substances	INV (CN)	listed (product or constituents are listed)

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical safety assessment**1,1',1''-nitrilotripropan-2-ol**

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

H318 Causes serious eye damage.

Safety datasheet sections which have been updated:

Annex

Further information:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

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Key or legend to abbreviations and acronyms used in the safety data sheet

ADN	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
AICS	Australian Inventory of Chemical Substances
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
BCF	Bioconcentration factor
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
DSL	Domestic Substances List
EC...	Effect concentration ... %
ENCs	Existing Notified Chemical Substances (Japan)
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISHL	Industrial Safety and Health Law (Japan)
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
KECI	Korea Existing Chemicals Inventory
LC...	Lethal Concentration, ...%
LD...	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NDSL	Non-Domestic Substances List
NOAEL	no observable adverse effect level
NOEL/NOEC	No Observed-effect level/concentration
NZIoC	New Zealand Inventory of Chemicals
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PICCS	Philippine Inventory of Chemicals and Chemical Substances
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport international ferroviaire de marchandises dangereuses
TG	Test Guideline
TRGS	Technische Regeln für Gefahrstoffe
TSCA	Toxic Substances Control Act
vPvB	very persistent, very bioaccumulative
WGK	Wassergefährdungsklasse

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

1,1,1"-nitrilotripropan-2-ol

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000015069_EN_01.pdf