MARLICAN

Version: 5.14 **Revision Date 28.06.2017**

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name	**MARLICAN**
REACH No.	01-2119489372-31-0002
Substance name (REACH / CLP)	Benzene, C10-13-alkyl derivs.

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
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

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aspiration hazard Category 1	May be fatal if swallowed and enters airways.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word Danger

Hazard statements

H304	May be fatal if swallowed and enters airways.

Precautionary statements

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

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

Benzene, C10-13-alkyl derivs.

component type: Active ingredient

EC-No.: 267-051-0 **Index-No.:** **CAS-No.:** 67774-74-7
REACH No.: 01-2119489372-31-0002
Substance name (REACH / CLP): Benzene, C10-13-alkyl derivs.
Classification (Regulation (EC) No 1272/2008): Asp. Tox. 1 H304

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	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
If inhaled	In the case of inhalation of aerosol/mist consult a physician if necessary. Consult a physician after significant exposure.
In case of skin contact	Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. If eye irritation persists, consult a specialist.
If swallowed	Do NOT induce vomiting. Keep respiratory tract clear. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed	Symptoms: No information available. Risks: Risk of product entering the lungs on vomiting after ingestion.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed	Treatment: No information available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Water mist, Carbon dioxide (CO2), Foam, Dry chemical, Keep containers and surroundings cool with water spray.

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: Carbon dioxide (CO2) Carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective suit.
Further information	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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	If the product contaminates rivers and lakes or drains inform respective authorities.Avoid subsoil penetration.Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). After cleaning, flush away traces with water.

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	Avoid inhalation, ingestion and contact with skin and eyes. Do not breathe vapours or spray mist. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion	Normal measures for preventive fire protection. Keep away from combustible material. Take precautionary measures against static discharges. No smoking.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	No special storage conditions required. Keep in a well-ventilated place.
Storage class (TRGS 510)	10: Combustible liquids not in Storage Class 3
container material	suitable materials: Stainless steel: 1.4541, 1.4571 (DIN); X6CrNiTi18-10, X6CrNiMoTi17-12-2 (EN); 321, 316 Ti (AISI)

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

No data available

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

No data available

DERIVED NO EFFECT LEVEL (DNEL)

Substance name: Benzene, C10-13-alkyl derivs.			
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	9,6 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	7 mg/m3	
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects	7 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 - local effects		Not relevant / not applicable
	dermal, long-term exposure - systemic effects	4,8 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	1,8 mg/m3	
	Oral, long-term exposure - systemic effects	0,5 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects	1,8 mg/m3	

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: Benzene, C10-13-alkyl derivs.		
Environmental Compartment	**Value**	**Note**
Fresh water	0,00075 mg/l	
Marine water	0,000075 mg/l	
intermittent release	0,0001 mg/l	
treatment plant	14,2 mg/l	
Fresh water sediment	1,65 mg/kg	based on dry weight
Marine sediment	0,165 mg/kg	based on dry weight
Soil	0,329 mg/kg	based on dry weight
food		Not relevant / not applicable

8.2 Exposure controls

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 type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, 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: Fluorinated rubber
Break through time: >= 480 min

Layer thickness: 0,4 mm

gloves suitable for splash protection:
Material: Nitrile rubber/nitrile latex
Break through time: >= 240 min
Layer thickness: 0,35 mm

unsuitable gloves
Material: Natural rubber/natural latex, Polychloroprene, butyl-rubber, Polyvinylchloride

Eye protection	Safety glasses
Skin and body protection	Protective suit
Hygiene measures	General industrial hygiene practice.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	If the product contaminates rivers and lakes or drains inform respective authorities.
Soil	Avoid subsoil penetration.
Water	Do not flush into surface water or sanitary sewer system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid; 20 °C; 1.013 hPa
Form	liquid
Colour	colourless
Odour	No information available.
Odour Threshold	No data available
pH	Not applicable
Pour point	< -70 °C; ISO 3016
Boiling point/boiling range	275 - 312 °C; 1.013 hPa; ASTM D 1078
Flash point	ca. 120 °C; DIN 51758
Evaporation rate	No data available
Flammability (solid, gas)	not applicable (liquid)
Lower explosion limit	0,45 %(V)
Upper explosion limit	10,7 %(V)
Vapour pressure	< 0,1 hPa; 20 °C
Relative vapour density	No data available
Density	0,86 g/cm3; 20 °C; DIN 51757
Relative density	No data available
Water solubility	< 0,01 g/l; 20 °C

Partition coefficient: n-octanol/water	log Pow: > 5,0
Ignition temperature	ca. 220 °C; DIN 51794
	ca. 341 °C; ASTM E 659
Viscosity, dynamic	7 mPas; 20 °C
Explosive properties	Constituents do not contain chemical groups associated with explosivity.
Oxidizing properties	not expected based on structure and functional groups

9.2 Other data

None known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note No decomposition if stored and applied as directed.

10.2 Chemical stability

Note Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions None known.

10.4 Conditions to avoid

Conditions to avoid Heat, flames and sparks.

10.5 Incompatible materials to avoid

Materials to avoid Strong oxidizing agents;

10.6 Hazardous decomposition products

Hazardous decomposition products	No decomposition if stored normally.
Thermal decomposition	No decomposition if used as directed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	LD50 Rat: > 2.000 mg/kg; Directive 67/548/EEC, Annex V, B.1. Symptoms: Piloerection, Gastrointestinal disturbance Based on available data, the classification criteria are not met.
Acute inhalation toxicity	No data available Negligible or unlikely exposure pathways
Acute dermal toxicity	LD50 Rat: > 2.000 mg/kg; OECD Test Guideline 402 Symptoms: Erythema, Crusting (literature value)

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Skin irritation Rabbit: moderately irritating; Directive 84/449/EEC, B.4.
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Eye irritation Rabbit: not irritating; Directive 84/449/EEC, B.5.
Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Sensitisation Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro In vitro tests did not show mutagenic effects
(literature value)

Genotoxicity in vivo In vivo tests did not show mutagenic effects
(literature value)

Remarks Based on available data, the classification criteria are not met.

Carcinogenicity

Carcinogenicity The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.

Reproductive toxicity

Reproductive toxicity Two-generation reproductive toxicity: Rat; Oral
NOAEL ((parents)): 50 mg/kg (based on body weight and day)
NOAEL (F1): 50 mg/kg (based on body weight and day)
NOAEL (F2): 50 mg/kg (based on body weight and day); OECD Test Guideline 416
(literature value)
Based on available data, the classification criteria are not met.

Teratogenicity Rat; Oral
NOAEL: 125 mg/kg (based on body weight and day)
NOAEL (pregnant female): 125 mg/kg (based on body weight and day); OECD Test Guideline 414
based on body weight and day
(literature value)
Based on available data, the classification criteria are not met.

STOT - single exposure

Remarks The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Remarks The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity Rat; Oral; 28-day
LOAEL: 125 mg/kg (based on body weight and day); OECD Test Guideline 407
Symptoms: reduced food consumption, reduced body weight gain
based on body weight and day
(literature value)

Rat; Oral; Subchronic toxicity127 d
NOAEL: 50 mg/kg (based on body weight and day)
LOAEL: 500 mg/kg (based on body weight and day); OECD Test Guideline 416
Symptoms: reduced body weight gain

based on body weight and day
(literature value)

Aspiration hazard

Aspiration toxicity May be fatal if swallowed and enters airways.

Further information

Toxicological information Toxicokinetics
The substance is rapidly eliminated from the body.
extensive and rapid metabolisation
(literature value)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	(14 d) Danio rerio (zebra fish) ; semi-static test; OECD Test Guideline 204 In the range of water solubility not toxic under test conditions.
Toxicity to fish - Chronic toxicity	(21 d) Brachydanio rerio (zebrafish); flow-through test In the range of water solubility not toxic under test conditions.
Toxicity to daphnia and other aquatic invertebrates	(48 h) Daphnia magna (Water flea) ; Directive 67/548/EEC, Annex V, C.2. In the range of water solubility not toxic under test conditions. (literature value)
Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity	(21 d) Daphnia magna (Water flea); reproduction rate; semi-static test; OECD Test Guideline 211; In the range of water solubility not toxic under test conditions.
Toxicity to aquatic plants	(72 h) Desmodesmus subspicatus (Scenedesmus subspicatus) ; OECD Test Guideline 201; In the range of water solubility not toxic under test conditions. (literature value)
Toxicity to bacteria	The substance is not to be considered to be inhibitory to bacteria.
Toxicity to soil dwelling organisms	No data available
Toxicity to terrestrial flora	No data available
Toxicity for other terrestrial non-mammalian fauna	No data available

12.2 Persistence and degradability

Biodegradability	Readily biodegradable.; > 60 %; 28 d; aerobic Category approach

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill sunfish); 96 h; 0,092 mg/l; Bioconcentration factor (BCF): 35 Does not significantly accumulate in organisms. (literature value)

12.4 Mobility in soil

Mobility	Adsorption/Soil; Koc: 22000; log Koc: 4,34 immobile (literature value)

12.5 Results of PBT and vPvB assessment

Results of PBT assessment Based on available data, the classification criteria are not met.

12.6 Other adverse effects

General advice None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product Can be incinerated, when in compliance with local regulations.

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
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	Y
Remarks	MARPOL NAME: Alkyl (C9+) benzenes

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.

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

NOTIFICATION STATUS

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)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	NZIOC	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)
Switzerland. Consolidated Inventory	CH INV	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

Benzene, C10-13-alkyl derivs.

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.

H304	May be fatal if swallowed and enters airways.

Safety datasheet sections which have been updated:

14. Transport information
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.

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
IUAPC	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.

Benzene, C10-13-alkyl derivs.

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000000327_EN_01.pdf