Safety Data Sheet
DUNAPOL® C 045 HLL POLYOL

Safety Data Sheet dated 11/20/2020, version 1

1. IDENTIFICATION

Product identifier

Mixture identification:

Trade name: DUNAPOL® C 045 HLL POLYOL

Other means of identification:

Trade code: 41045

Recommended use of the chemical and restrictions on use

Product type:

Based polyol mixture

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company:

DUNA-USA Inc.

4210 FM 1405 Baytown, Texas 77523 - U.S.A.

Michigan Plant: 5900 West 6th street Ludington, Michigan 49431

www.dunagroup.com/usa

Competent person responsible for the safety data sheet:

info@dunausa.com

Emergency phone number

DUNA-USA Inc

t:+1 281-383-3862

2. HAZARD(S) IDENTIFICATION

Classification of the chemical

Warning, Skin Irrit. 2, Causes skin irritation.

Warning, Eye Irrit. 2A, Causes serious eye irritation.

Label elements

Hazard pictograms:

Warning

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash ... Thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see ... On this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

Special Provisions:

None

Hazards not otherwise classified identified during the classification process:
None
Ingredient(s) with unknown acute toxicity:
None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
N.A.
Mixtures
Hazardous components within the meaning of 29 CFR 1910.1200 and related classification:

Qty	Name	Ident. Number	Classification
>= 20% - < 25%	Polypropylene glycol	CAS: 25322-69-4	A.1/4/Oral Acute Tox. 4 H302
>= 12.5% - < 15%	Reaction products of phosphoryl trichloride and 2-methyloxirane	CAS: 1244733-77-4 EC: 807-935-0 REACH No.: 01-2119486772-26	A.1/4/Oral Acute Tox. 4 H302
>= 1% - < 2.5%	Benzyldimethylamine	Index number: 612-074-00-7 CAS: 103-83-3 EC: 203-149-1 REACH No.: 01-2119529232-48	B.6/3 Flam. Liq. 3 H226 A.1/3/Inhal Acute Tox. 3 H331 A.1/4/Dermal Acute Tox. 4 H312 A.1/4/Oral Acute Tox. 4 H302 A.2/1B Skin Corr. 1B H314 US-HAE/C2 Aquatic Chronic 2 H411

4. FIRST-AID MEASURES

Description of necessary measures
In case of skin contact:
Immediately take off all contaminated clothing and dispose off safely.
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.
As quickly as possible, remove contaminated clothing, shoes and leather goods (e.g. watchbrands, belts). Quickly and gently blot or brush away excess chemical. Immediately wash with lukewarm, gently flowing water and non-abrasive soap for 15-20 minuntes.
Completely decontaminate clothing, shoes and leather goods before reuse or discard. If skin irritation or rush occurs get medical advice/attention.
In case of eyes contact:
In case of contact with eyes, wash using water for at least 30 minutes, keep the eyes opened and consult an ophthalmologist. Remove contact lenses if possible.
Protect uninjured eye.
Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 5 minutes, or until the chemical is removed, while holding the eyelid(s) open. If irritation persist, repeat flushing. Obtain medical attention immediately.
In case of ingestion:
Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.
If swallowed, call a POISON CENTER or doctor/physician.
Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. Do not induce vimiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Quickly transport victim to an emergency care facility.

In case of inhalation:

Remove casualty to fresh air and keep warm and at rest.
If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposed or concerned: Get medical advice/attention. If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Immediately obtain medical attention and transport victim to an emergency care facility.

Most important symptoms/effects, acute and delayed

None

Indication of immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
Nothing specific.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Water.
Carbon dioxide (CO2).

Unsuitable extinguishing media:

None in particular.

Specific hazards arising from the chemical

Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

Hazardous combustion products:

None

Explosive properties: Not explosive
Oxidizing properties: Not oxydant

Special protective equipment and precautions for fire-fighters

Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures

Wear personal protection equipment.
Remove persons to safety.
See protective measures under point 7 and 8.

Methods and materials for containment and cleaning up

Wash with plenty of water.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Do not use on extensive surface areas in premises where there are occupants.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink or smoke while working.

Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:
None in particular.
Instructions as regards storage premises:
Adequately ventilated premises.
Storage temperature:
Store at ambient temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

No occupational exposure limit available

DNEL Exposure Limit Values

Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4

Worker Industry: 22.4 ppm - Consumer: 11.2 ppm - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
Worker Industry: 5.82 ppm - Consumer: 1.46 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Industry: 8 mg/kg bw/d - Consumer: 4 mg/kg bw/d - Exposure: Human Dermal - Frequency: Short Term, systemic effects
Worker Industry: 2.08 mg/kg bw/d - Consumer: 1.04 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Consumer: 0.52 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

benzyldimethylamine - CAS: 103-83-3

Worker Industry: 2.3 mg/kg bw/d - Consumer: 1.25 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Worker Industry: 14.6 ppm - Consumer: 43.75 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Industry: 1 ppm - Exposure: Human Inhalation - Frequency: Long Term, local effects

PNEC Exposure Limit Values

Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4

Target: Soil - Value: 1.7 mg/kg/d
Target: STP - Value: 7.84 mg/l
Target: Freshwater sediments - Value: 13.4 mg/kg/d
Target: Marine water sediments - Value: 1.34 mg/kg/d
Target: Marine water - Value: 0.064 mg/l
Target: Fresh Water - Value: 0.64 mg/l
Target: Intermittent release - Value: 0.51 mg/l
Target: Food chain - Value: 11.6 mg/l

benzyldimethylamine - CAS: 103-83-3

Target: Fresh Water - Value: 0.0048 mg/l
Target: Marine water - Value: 0.00048 mg/l
Target: Freshwater sediments - Value: 0.071 mg/kg/d
Target: Microorganisms in sewage treatments - Value: 534 mg/l
Target: Soil - Value: 0.0114 mg/kg/d
Target: Marine water sediments - Value: 0.0071 mg/kg/d
Target: Intermittent release - Value: 0.0134 mg/l

Appropriate engineering controls:

None

Individual protection measures

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

General hygiene conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Value	Method:	Notes:
Appearance and colour:	Transparent liquid	--	--
Odour:	Slightly amine	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Initial boiling point and boiling range:	Not available	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour density:	N.A.	--	--
Flash point:	No	--	--
Evaporation rate:	N.A.	--	--
Vapour pressure:	Not available	--	--
Relative density:	1.080 g/cc	--	--
Solubility in water:	Miscible	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	Not available	--	--
Auto-ignition temperature:	Not pyrophoric	--	--
Decomposition temperature:	Not available	--	--
Viscosity:	950-1050 cps (25°C)	--	--
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

10. STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions

Chemical stability

Stable under normal conditions

Possibility of hazardous reactions

Conditions to avoid

Stable under normal conditions.

Incompatible materials

None in particular.

Hazardous decomposition products
Oxides of nitrogen and carbon oxides.
Phosphorus oxides.
Hydrochloric acid.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Toxicological information of the product:
DUNAPOL® C 045 HLL POLYOL
a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
c) serious eye damage/irritation
The product is classified: Eye Irrit. 2A H319
d) respiratory or skin sensitisation
Not classified
Based on available data, the classification criteria are not met
e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met
g) Reproductive toxicity/toxicity to fertility
Not classified
Based on available data, the classification criteria are not met
h) STOT-single exposure
Not classified
Based on available data, the classification criteria are not met
i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met
Toxicological information of the main substances found in the product:
Polypropylene glycol - CAS: 25322-69-4
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 1500 mg/kg - Source: Deduced from hazard classification of the substance
Test: LD50 - Route: Dermal - Species: Rabbit > 10000 mg/kg - Based on available data, the classification criteria are not met
b) skin corrosion/irritation:
Test: Skin Irritant -Result: Negative - Based on available data, the classification criteria are not met
c) serious eye damage/irritation:
Test: Eye Irritant Slightly irritating - Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation:
Test: Skin Sensitization -Result: Negative - Based on available data, the classification criteria are not met
e) germ cell mutagenicity:
Test: Mutagenesis -Result: Negative - Based on available data, the classification criteria are not met

f) carcinogenicity:
Collected data are not significant.
g) Reproductive toxicity/toxicity to fertility:
Collected data are not significant.
h) STOT-single exposure:
Based on available data, the classification criteria are not met
Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 632 mg/kg
Test: LD50 - Route: Dermal - Species: Rat > 2000 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat > 4.6 mg/l - Duration: 4h
b) skin corrosion/irritation:
Based on available data, the classification criteria are not met
c) serious eye damage/irritation:
Based on available data, the classification criteria are not met
d) respiratory or skin sensitisation:
Based on available data, the classification criteria are not met
e) germ cell mutagenicity:
Based on available data, the classification criteria are not met
f) carcinogenicity:
Based on available data, the classification criteria are not met
g) Reproductive toxicity/toxicity to fertility:
Based on available data, the classification criteria are not met
h) STOT-single exposure:
Based on available data, the classification criteria are not met
i) STOT-repeated exposure:
Based on available data, the classification criteria are not met
j) aspiration hazard:
Based on available data, the classification criteria are not met
benzyldimethylamine - CAS: 103-83-3
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 579 mg/kg
Test: LD50 - Route: Dermal - Species: Rabbit = 1477 mg/kg
Test: LC50 - Route: Inhalation - Species: Rat = 2052 mg/m3 - Duration: 4h
b) skin corrosion/irritation:
Test: Skin Corrosive - Species: Rabbit - Result: Positive - Source: Deduced from hazard classification of the substance
c) serious eye damage/irritation:
Test: Eye Irritant - Species: Rabbit - Result: Positive - Source: Deduced from hazard classification of the substance
d) respiratory or skin sensitisation:
Test: Skin Sensitization - Route: Dermal - Species: Guinea pig -Result: Negative
e) germ cell mutagenicity:
Test: Mutagenesis - Species: Generic Bacteria -Result: Negative - Source: OECD TG 471 (Ames Test)
Test: MUTAG - Species: Mammalian cells -Result: Negative - Source: OECD TG 476
f) carcinogenicity:
Species: Rabbit - Based on available data, the classification criteria are not met
g) Reproductive toxicity/toxicity to fertility:
Species: Rat - Based on available data, the classification criteria are not met
h) STOT-single exposure:
Based on available data, the classification criteria are not met
i) STOT-repeated exposure:
No data available for the product
j) aspiration hazard:
No data available for the product

Substance(s) listed on the NTP report on Carcinogens:
None.
Substance(s) listed on the IARC Monographs:
None.
Substance(s) listed as OSHA Carcinogen(s):
None.
Substance(s) listed as NIOSH Carcinogen(s):
None.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Adopt good working practices, so that the product is not released into the environment.
DUNAPOL® C 045 HLL POLYOL
Not classified for environmental hazards
Based on available data, the classification criteria are not met
Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish - Danio Rerio (zebrafish) = 100 mg/l - Duration h: 96
Endpoint: LC50 - Species: Daphnia = 131 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae = 82 mg/l - Duration h: 72
benzyldimethylamine - CAS: 103-83-3
a) Aquatic acute toxicity:
Endpoint: LC50 - Species: Fish = 37.8 mg/l - Duration h: 96 - Notes: OECD TG 203
Endpoint: EC50 - Species: Daphnia > 100 mg/l - Duration h: 24
Endpoint: EC50 - Species: Algae = 1.34 mg/l - Duration h: 72
Endpoint: EC10 - Species: Bacteria = 54 mg/l - Duration h: 16
Endpoint: EC50 - Species: Bacteria - Pseudomonas Putida = 749.6 mg/l - Duration h: 17 - Notes: DIN 38412
b) Aquatic chronic toxicity:
Endpoint: NOEC - Species: Daphnia = 0.789 mg/l - Duration h: 504 - Notes: OECD TG 211
Endpoint: NOEC - Species: Algae = 0.24 mg/l - Duration h: 72
Persistence and degradability
Polypropylene glycol - CAS: 25322-69-4
Biodegradability: Easily biodegradable
Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4
Biodegradability: Potentially biodegradable - Duration: 28 d - %: 14
benzyldimethylamine - CAS: 103-83-3
Biodegradability: Not easily biodegradable - Test: Oxygen consumption - Duration: 28 d - %: 1 - Notes: OECD TG 301C
Bioaccumulative potential
Polypropylene glycol - CAS: 25322-69-4
Bioaccumulation: Not bioaccumulative
Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4
Bioaccumulation: Bioaccumulative - Test: BCF - Bioconcentrantion factor 0.8
Bioaccumulation: Bioaccumulative - Test: Kow - Partition coefficient 2.68
benzyldimethylamine - CAS: 103-83-3
Bioaccumulation: Bioaccumulative - Test: BCF - Bioconcentrantion factor 4.25 - Notes: Initial concentration 0,5 mg
Mobility in soil
Reaction products of phosphoryl trichloride and 2-methyloxirane - CAS: 1244733-77-4
Mobility in soil: Mobile - Test: Partition coefficient soil/water 2.76
benzyldimethylamine - CAS: 103-83-3
Mobility in soil: Mobile - Test: Koc 2.457 - Notes: Stability: hardly soluble in water
Other adverse effects

No data available for the product

13. DISPOSAL CONSIDERATIONS

Waste treatment and disposal methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

14. TRANSPORT INFORMATION

UN number

Not classified as dangerous in the meaning of transport regulations.

UN proper shipping name

N.A.

Transport hazard class(es)

N.A.

Packing group

N.A.

Environmental hazards

ADR-Enviromental Pollutant: No

IMDG-Marine pollutant: No

Most important toxic component: DUNAPOL® C 045 HLL POLYOL

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

N.A.

Special precautions

N.A.

15. REGULATORY INFORMATION

USA - Federal regulations

TSCA - Toxic Substances Control Act

List of substances included in the TSCA inventory: Polypropylene glycol, benzyldimethylamine.

List of substances not included in the TSCA inventory: Reaction products of phosphoryl trichloride and 2-methyloxirane.

TSCA listed substances:

Polypropylene glycol is listed in TSCA Section 8b

benzyldimethylamine is listed in TSCA Section 8b.

SARA - Superfund Amendments and Reauthorization Act

Section 302 – Extremely Hazardous Substances: no substances listed.

Section 304 – Hazardous substances: no substances listed.

Section 313 – Toxic chemical list: no substances listed.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

No substances listed.

CAA - Clean Air Act

CAA listed substances:

Polypropylene glycol is listed in CAA Section 112(b) - HON, Section 111.

CWA - Clean Water Act

CWA listed substances:

None.

USA - State specific regulations

California Proposition 65

Substance(s) listed under California Proposition 65:

None.

Massachusetts Right to know
Substance(s) listed under Massachusetts Right to know:
No substances listed.
New Jersey Right to know
Substance(s) listed under New Jersey Right to know:
benzyldimethylamine.
Pennsylvania Right to know
Substance(s) listed under Pennsylvania Right to know:
No substances listed.

16. OTHER INFORMATION

Text of phrases referred to under heading 3:
H302 Harmful if swallowed.
H226 Flammable liquid and vapour.
H331 Toxic if inhaled.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H411 Toxic to aquatic life with long lasting effects.

Safety Data Sheet dated 11/20/2020, version 1
Disclaimer:
The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. The information relates only to the specific material and may not be valid for such material used in combination with any other material or in any process.
This Safety Data Sheet cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
HMIS:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PNEC:	Predicted No Effect Concentration.

RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average