

according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 1 of 13

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

NATURAL PROPIONIC ACID

Substance name:	NATURAL PROPIONIC ACID
REACH Registration Number:	01-2119486971-24-XXXX
CAS No:	79-09-4
Index No:	607-089-00-0
EC No:	201-176-3

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

Use of the substance/mixture

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

1.3. Details of the supplier of the safety data sheet

Company name:	Axxence Aromatic GmbH	
Street:	Tackenweide 28	
Place:	D-46446 Emmerich am Rhein	
Telephone:	+ 49 2822 68561 0	Telefax: + 49 2822 68561 39
E-mail:	info@axxence.com	
Contact person:	Safety Team	Telephone: + 49 2822 68561 0
E-mail:	safety-documentation@axxence.com	
Internet:	www.axxence.de	
Responsible Department:	Safety Management	
1.4. Emergency telephone	+49 2822 68561 99	

number:

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Flam. Liq. 3; H226 Skin Corr. 1B; H314 STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Pictograms:

GB CLP Regulation Signal word:

Danger



Hazard statements

H226	Flammable liquid and vapour.		
H314	Causes severe skin burns and eye damage.		
H335	May cause respiratory irritation.		
Productionary atatamenta			

Precautionary statements

oouullonuly olulonion	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
	smoking.
P233	Keep container tightly closed.



according to UK REACH Regulation

NATURAL PROPIONIC ACID			
Revision date: 10.12.2024	Product code: 292400	Page 2 of 13	
P240	Ground and bond container and receiving equipment.		
P241	Use explosion-proof electrical/ventilating/lighting equipment.		
P242	Use non-sparking tools.		
P243	Take action to prevent static discharges.		
P260	Do not breathe dust/fume/gas/mist/vapours/spray.		
P264	Wash hands thoroughly after handling.		
P271	Use only outdoors or in a well-ventilated area.		
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.		
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.		
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.		
P363	Wash contaminated clothing before reuse.		
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.		
P310	Immediately call a POISON CENTER/doctor.		
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.		
P370+P378	In case of fire: Use Water spray jet / Extinguishing powder / Carbon dioxide (CO2) / alcohol resistant foam to extinguish.		
P233	Keep container tightly closed.		
P403+P235	Store in a well-ventilated place. Keep cool.		
P405	Store locked up.		
P501	Dispose of contents/container to Organic waste.		
2.3. Other hazards			

This substance is not listed as Substance of Very High Concern (SVHC) in the Candidate List according to REACH, Article 59. This substance is not identified as a substance of very high concern (SVHC) and is not subject to authorization according to REACH, Annex XIV.

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula:	C3 H6 O2
Molecular weight:	74,08 g/mol

Relevant ingredients

CAS No	Chemical name	Chemical name			
	EC No	Index No	REACH No		
	Classification (GB CLP Regulation)				
79-09-4	NATURAL PROPIONIO	NATURAL PROPIONIC ACID			
	201-176-3	201-176-3 607-089-00-0 01-2119486971-24-XXXX			
	Flam. Liq. 3, Skin Corr. 1B, STOT SE 3; H226 H314 H335				

Full text of H and EUH statements: see section 16.

CAS No	EC No	Chemical name	Quantity
	Specific Cond	c. Limits, M-factors and ATE	
79-09-4	201-176-3	NATURAL PROPIONIC ACID	100 %
	Skin Corr. 1B	C50 = >20 mg/l (vapours); dermal: LD50 = 3235 mg/kg; oral: LD50 = 3455 mg/kg ; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < E 3; H335: >= 10 - 100	

SECTION 4: First aid measures

4.1. Description of first aid measures



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 3 of 13

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

After inhalation

Provide fresh air. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), Foam, Extinguishing powder.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Remove all sources of ignition. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Explosion risk.

6.3. Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 4 of 13

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances.

7.3. Specific end use(s)

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
79-09-4	Propionic acid	10	31		TWA (8 h)	WEL
		15	46		STEL (15 min)	WEL



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 5 of 13

DNEL/DMEL values

CAS No	Substance					
DNEL type	DNEL type Exposure route Effect Value					
79-09-4	NATURAL PROPIONIC ACID					
Worker DNEL,	long-term	inhalation	systemic	73 mg/m³		
Worker DNEL,	acute	inhalation	local	62 mg/m³		
Worker DNEL,	long-term	inhalation	local	31 mg/m³		
Worker DNEL,	long-term	dermal	systemic	20,9 mg/kg bw/day		
Consumer DN	EL, long-term	inhalation	systemic	18,3 mg/m³		
Consumer DN	EL, long-term	inhalation	local	3,7 mg/m³		
Consumer DN	EL, acute	inhalation	local	30,8 mg/m³		
Consumer DN	EL, long-term	dermal	systemic	10,5 mg/kg bw/day		
Consumer DN	EL, long-term	oral	systemic	10,5 mg/kg bw/day		

PNEC values

CAS No	Substance		
Environmen	tal compartment	Value	
79-09-4	NATURAL PROPIONIC ACID		
Freshwater		0,5 mg/l	
Freshwater	Freshwater (intermittent releases) 5 mg/l		
Marine wate	larine water 0,05 mg/l		
Freshwater sediment 1,86 mg/kg		1,86 mg/kg	
Marine sediment		0,186 mg/kg	
Micro-organisms in sewage treatment plants (STP)		5 mg/l	
Soil		0,126 mg/kg	

8.2. Exposure controls







Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Suitable gloves type: Butyl caoutchouc (butyl rubber) / FKM (fluoro rubber)

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 6 of 13

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:	Colourless to pale yellow	
Odour:	Acrid, pungent	
Melting point/freezing point:		-24 °C
Boiling point or initial boiling point and		141 °C
boiling range:		
Flammability:		not determined
Lower explosion limits:		not applicable
Upper explosion limits:		not applicable
Flash point:		53 °C
Auto-ignition temperature:		440 °C
Decomposition temperature:		not determined
pH-Value (at 20 °C):		2,5
Viscosity / kinematic: (at 20 °C)		1,11 mm²/s
Water solubility:		1000 g/l
(at 25 °C)		
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		0,33
Vapour pressure:		3,9 hPa
(at 20 °C)		00.04 hDa
Vapour pressure:		22,01 hPa
(at 50 °C) Density (at 20 °C):		0,99 g/cm ³
Relative vapour density:		2,55
(at 20 °C)		2,00
Particle characteristics:		not applicable
9.2. Other information		
Information with regard to physical ha Explosive properties		
The product is not: Explosive. not explosive.	volosive according to ELLA 14	
Oxidizing properties		
The product is not: oxidising.		
Other safety characteristics Evaporation rate:		not determined
Solid content:		
Viscosity / dynamic:		not determined 1,102 mPa·s
(at 20 °C)		1,102 11124.2
SECTION 10: Stability and reactivity		

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable.

10.2. Chemical stability



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 7 of 13

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

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

CAS No	Chemical name							
	Exposure route	Dose		te Dose Species		Source	Method	
79-09-4	NATURAL PROPIONIC ACID							
	oral LD50 3455 R mg/kg		Rat	REACH Registration	OECD 401			
	dermal	LD50 mg/kg	3235	Rat	REACH Registration	OECD 402		
	inhalation (4 h) vapour	LC50	>20 mg/l	Rat	REACH Registration	OECD 403		

Irritation and corrosivity

Serious eye damage/eye irritation: Skin corrosion/irritation: Causes severe skin burns and eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met. Carcinogenicity: Based on available data, the classification criteria are not met. Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (NATURAL PROPIONIC ACID)

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

Other information

This substance is classified as hazardous according to Regulation (EC) No 1272 (2008).

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met. The product is not: Ecotoxic.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 8 of 13

CAS No	Chemical name								
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method		
79-09-4	NATURAL PROPIONIC ACID								
	Acute fish toxicity	LC50 mg/l	>10.000		Leuciscus idus (golden orfe)	REACH Registration	DIN 38412		
	Acute crustacea toxicity	EC50 mg/l	> 500		Daphnia magna (Big water flea)	REACH Registration	EU C.2		
	Acute bacteria toxicity	EC50 mg/l()	>100	0,5 h	Activated sludge	REACH Registration	DIN/EN ISO 8192		

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name						
	Method	Value		d	Source		
	Evaluation						
79-09-4	NATURAL PROPIONIC ACID						
	OECD 302 B	95%		10	REACH registration		
	Readily biodegradable						
	OECD 302 B	94%		8	REACH registration		
	Readily biodegradable						
	OECD 302 B	84%		3	REACH registration		
	Readily biodegradable						

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

The product has not been tested.

CAS	No	Chemical name	Log Pow
79-09	9-4	NATURAL PROPIONIC ACID	0,33

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

The product has not been tested.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 9 of 13

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)	
14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+3
Classification code:	CF1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	83
Tunnel restriction code:	D/E
Other applicable information (land transp	ort)
E2	
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID with not less than 90% acid by mass
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8 +3
Classification code:	CF1
Limited quantity:	1 L
Excepted quantity:	E2
Other applicable information (inland water	rways transport)
E2	
Marine transport (IMDG)	
14.1. UN number or ID number:	UN 3463
14.2. UN proper shipping name:	PROPIONIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+3

according to UK REACH Regulation

C E	according to UK REACH Regulation						
NATURAL PROPIONIC ACID							
Revision date: 10.12.2024	Product code: 292400	Page 10 of 2					
Special Provisions:	-						
Limited quantity:	1 L						
Excepted quantity:	E2						
EmS:	F-E, S-C						
Air transport (ICAO-TI/IATA-DGR)							
<u>14.1. UN number or ID number:</u> 14.2. UN proper shipping name:	UN 3463 PROPIONIC ACID						
14.3. Transport hazard class(es):	8						
14.4. Packing group:							
Hazard label:	8+3						
Limited quantity Passenger:	0.5 L						
Passenger LQ:	V.5 L Y840						
Excepted quantity:	E2						
IATA-packing instructions - Passenger:	851						
IATA-max. quantity - Passenger:	1 L						
IATA-packing instructions - Cargo:	855						
IATA-max. quantity - Cargo:	30 L						
14.5. Environmental hazards							
ENVIRONMENTALLY HAZARDOUS:	No						
14.6. Special precautions for user							
Warning: Combustible liquid. strongly o							
14.7. Maritime transport in bulk according to	o IMO instruments						
not applicable							
Other applicable information							
Hazchem code:	•2W						
SECTION 15: Regulatory information							
15.1. Safety, health and environmental regul	lations/legislation specific for the substance or mixture						
EU regulatory information							
Restrictions on use (REACH, annex XVII):							
Entry 3, Entry 40							
Directive 2010/75/EU on industrial emissions:	100 % (990 g/l)						
Directive 2004/42/EC on VOC in paints and varnishes:	100 % (990 g/l)						
Information according to Directive 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS						
Additional information							
To follow: 850/2004/EC, 1107/2009/EC	C, 649/2012/EC						
National regulatory information							
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juve work protection guideline' (94/33/EC).	enile					
Water hazard class (D):	1 - slightly hazardous to water						
15.2. Chemical safety assessment							
For this substance a chemical safety as	ssessment has not been carried out.						

For this substance a chemical safety assessment has not been carried out.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 11 of 13

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 12 of 13

Abbreviations and acronyms

Flam. Liq: Flammable liquids Skin Corr: Skin corrosion STOT SE: Specific target organ toxicity - single exposure ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service LC50: Lethal concentration. 50% LD50: Lethal dose, 50% CLP: Classification, labelling and Packaging REACH: Registration, Evaluation and Authorization of Chemicals GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals UN: United Nations DNFL: Derived No Effect Level DMEL: Derived Minimal Effect Level PNEC: Predicted No Effect Concentration ATE: Acute toxicity estimate LL50: Lethal loading, 50% EL50: Effect loading, 50% EC50: Effective Concentration 50% ErC50: Effective Concentration 50%, growth rate NOEC: No Observed Effect Concentration BCF: Bio-concentration factor PBT: persistent, bioaccumulative, toxic vPvB: very persistent, very bioaccumulative RID: Regulations concerning the international carriage of dangerous goods by rail ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures) EmS: Emergency Schedules MFAG: Medical First Aid Guide ICAO: International Civil Aviation Organization MARPOL: International Convention for the Prevention of Marine Pollution from Ships IBC: Intermediate Bulk Container VOC: Volatile Organic Compounds SVHC: Substance of Very High Concern For abbreviations and acronyms, see table at http://abbrev.esdscom.eu For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations). EC/EEC: European Community/European Economic Community EU: European Union M-factor: Multiplying factor IATA: International Air Transport Association DGR: Dangerous Goods Regulations ICAO: International Civil Aviation Organization **TI: Technical Instructions** VOC: volatile organic compound

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.



according to UK REACH Regulation

NATURAL PROPIONIC ACID

Revision date: 10.12.2024

Product code: 292400

Page 13 of 13

H335

May cause respiratory irritation.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Identified uses

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1	Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other	-	-	-	-	-	-	-	

LCS: Life cycle stages

PC: Product categories

ERC: Environmental release categories

TF: Technical functions

SU: Sectors of use PROC: Process categories AC: Article categories