



Solution*Partner*

Acrylates & Plasticizers



Solution*Partner*



HEAD OFFICE / 본사

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www.lgchem.com



LG화학 / Introduce LG Chem

Introduction of Acrylates & Plasticizers Division



첨단기술과 새로운 솔루션 제공으로 고객의 기대를 앞서가는 LG화학

LG화학은 오랜 경험과 앞선 기술력을 바탕으로 석유화학 산업을 선도하는 주도적인 회사로 성장하였습니다. 석유화학 기초 원료에서 합성수지, 각종 기능성 특화제품에 이르기까지 완벽한 수직계열화를 구축하고 국내외 관련산업에 고기능, 고품질의 원재료를 안정적으로 공급하고 있습니다.

21세기의 Global chemical partner LG화학. 첨단기술과 새로운 솔루션으로 당신의 미래를 준비합니다.

LG Chem is a leading chemical company in Korea and is well on its way to position as a dominant player in global chemical industry. It is a vertically integrated chemical company that manufactures a wide range of products from petrochemical goods to specialty chemical and supplies a stable feedstock of high performance and quality to related industries.

LG Chem, global chemical partner of the 21th century, prepares for your future with high technology and new solutions.



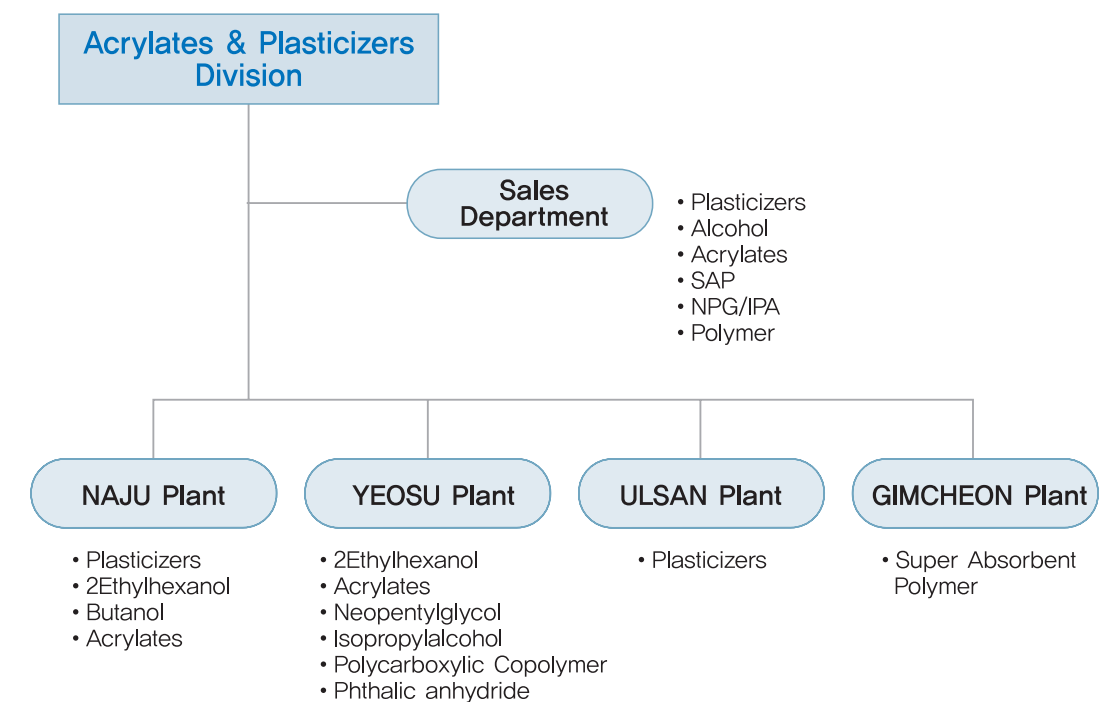
아크릴/가소제 사업부는 프로필렌 유도체의 안정적인 공급으로 고객의 성공을 든든하게 지원합니다.

We support our customers in their quest for success by being a reliable source for propylene derivatives.

Brief History

- 1984 Acrylates & Plasticizers Div. founded : 2-EH, DOP
- 1987 Started Acrylates business
- 1992 Started to produce PA
- 1993 Begins production of IPA
- 1998 Started to operate NPG plant
- 2003 Started to produce Polycarboxilic copolymer
- 2006 Started to produce Adhesives
- 2008 Acquired SAP business of Kolon

Organization



R&D

토털 솔루션 프로바이더 / Total Solution Provider



WINNING THROUGH TECHNOLOGY

LG화학은 기술연구원을 중심으로 석유화학, 산업재, 정보전자 소재 관련 기초기술과 응용기술을 개발하여 화학산업의 발전을 이끌어가고 있습니다. LG화학 기술연구원은 국내외의 R&D 네트워크와 첨단 인프라, 글로벌 연구인력을 기반으로 차별화된 소재와 기술개발에 주력하여 고객에게 인정받는 세계적인 연구소로 성장해 나갈 것입니다.

At LG Chem, we are leading our industry into the future through basic and applied research in the fields of petrochemicals, industrial materials, and information and electronic materials. Supported by state-of-the-art facilities, top-notch personnel, and a global R&D network, we continue to develop innovative materials and technologies that will win over customers around the globe.

 Global R&D Organization


최우선의 고객 가치 실현 - 아크릴/가소제 사업부

The Acrylates & Plasticizers Division: Creating Customer's Value

고객이 필요로 하는 것을 먼저 찾아 해결해주는 적극적인 가치 창출형 고객지원활동과 최고의 제품을 완벽하게 생산, 공급함으로써 고객을 가장 존경하는 회사, 고객이 가장 믿을 수 있는 회사가 되겠습니다.

We will become a company which sees value in respecting customers and provide best solution to the customers.

▷고객가치창출을 위해 고객과 신제품 공동개발을 비롯하여 고객의 생산성 향상, 품질 개선 및 판매 Link 등의 지원에 최선을 다하고 있습니다.

We do our best to create values for the customers by developing new applications, and supporting productivity and quality improvement in collaboration with our customers.

▷고객과 Workshop을 통해 개선 아이디어를 도출하고 더욱 양질의 서비스를 제공하고자 고객기술지원센터 및 기술정보사이트(www.chemwide.co.kr)를 운영하고 있습니다.

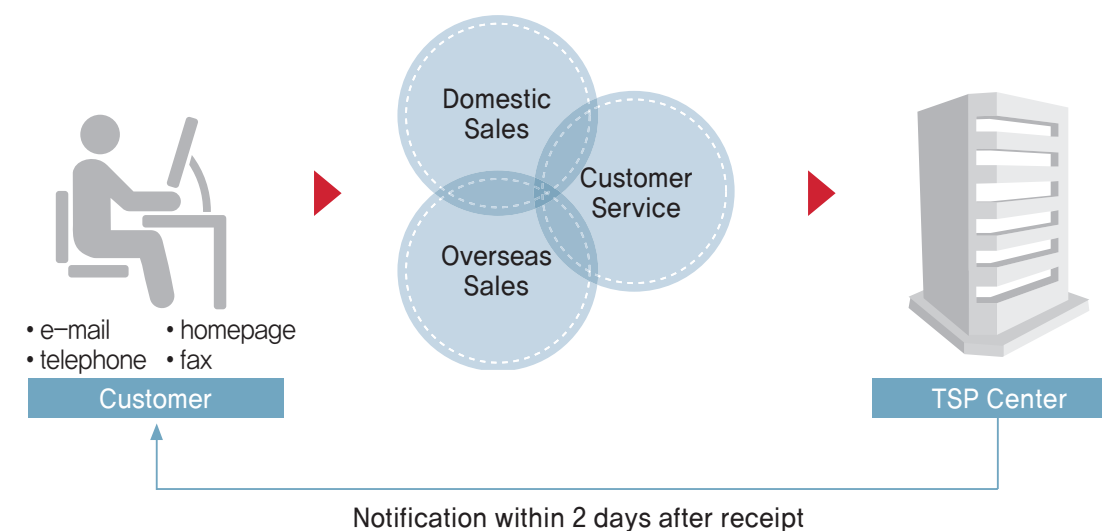
We run technical service center and technology information site(www.chemwide.co.kr) to offer our customers the best service solution.

▷고객기술 교육프로그램으로서 LG-Academy, 고객 방문 세미나, 고객 초청 세미나, 고객 분석 지원, 기술 자료 제공 등의 서비스를 통한 최고의 고객 감동을 위해 항상 노력하고 있습니다.

We are organizing education programs at LG-Academy, running seminars and providing technical analysis to give our customers satisfaction.

TSP Center

Our TSP Center is running to give technical support and a swift response to customers' queries, so as to provide maximum customer satisfaction.



아크릴레이트 / Acrylates



분자 내 이중결합과 관능기를 보유하여 화학 반응에 탁월한 성능을 나타냅니다

아크릴 산과 아크릴레이트는 분자 내에 이중결합과 관능기를 보유하고 있어 반응성이 뛰어나므로 여러가지 화학 반응에 탁월한 성능을 보여주고 있습니다.
고흡수성수지(SAP), 섬유, 접착제, 충격 보강제 등 다양한 반응공정의 원료로 폭넓게 활용하고 있습니다.

Acrylic acid and acrylate have excellent chemical reactivity with their double bond and functional group in the molecular structure.

Their high reactivity is a result of this characteristic.
They are used extensively as the raw materials for various reaction processes.
-for example with super absorbent polymer(SAP), textiles, paints, adhesives and impact reinforcing materials

●● 용도 / Application

제품/Products	화학식/Formula	용도/Uses
아크릴산 Acrylic Acid (AA)	$\text{CH}_2=\text{CH COOH}$	Acrylic Esters Super Absorbent Polymer 가교제 / Cross-linking Agent Chemical Intermediates
메틸아크릴레이트 Methyl Acrylate (MA)	$\text{CH}_2=\text{CH COO CH}_3$	아크릴 섬유 / Acrylic Fibers 산화방지제 / Anti-oxident 성형수지 / Resin Modifier
에틸아크릴레이트 Ethyl Acrylate (EA)	$\text{CH}_2=\text{CH COO C}_2\text{H}_5$	호제 / Textiles Sizing Agents 접착제 / Adhesives 유연성 수지 / Flexible Resin 부직포 결합제 / Nonwoven Binders 도료 및 잉크 / Paint & Ink
부틸아크릴레이트 Butyl Acrylate (BA)	$\text{CH}_2=\text{CH COO (CH}_2)_3\text{CH}_3$	접착제 / Adhesives 직물가공제 / Textile Binders 도료 및 잉크 / Paint & Ink 충격보강제 / Impact Modifier
2-에틸헥실 아크릴레이트 2-Ethyl Hexyl Acrylate (2-EHA)	$\text{CH}_2=\text{CH COO CH}_2\text{CH(CH}_2)_3\text{CH}_3$ CH_2CH_3	도료 및 잉크 / Paint & Ink 접착제 / Adhesives 건축자재 / Construction Materials

●● 제품규격 / Specifications

제품/Products	아크릴산 Acrylic Acid	메틸아크릴레이트 Methyl Acrylate	에틸아크릴레이트 Ethyl Acrylate	부틸아크릴레이트 Butyl Acrylate	2-에틸헥실아크릴레이트 2-Ethyl Hexyl Acrylate
항목/Item					
순도 / Purity wt %	Min 99.0	Min 99.5	Min 99.5	Min 99.5	Min 99.5
색상 / Color APHA	Max 10	Max 10	Max 10	Max 10	Max 10
비중 / Sp. Gr. (20/4°C)	1.047~1.051	0.953~0.958	0.919~0.923	0.896~0.901	0.882~0.888
수분 / Water wt %	Max 0.3	Max 0.05	Max 0.05	Max 0.05	Max 0.05
산도 / Acidity, wt % As Acrylic Acid	—	Max 0.005	Max 0.005	Max 0.005	Max 0.007
Inhibitor(MEHQ) wt ppm	200±20	15±5	15±5	15±5	15±5

●● 물성치 / Physical Properties

제품/Products	아크릴산 Acrylic Acid	메틸아크릴레이트 Methyl Acrylate	에틸아크릴레이트 Ethyl Acrylate	부틸아크릴레이트 Butyl Acrylate	2-에틸헥실아크릴레이트 2-Ethyl Hexyl Acrylate
특성치/Property					
분자량 / M.W.	72.1	86.1	100.1	128.2	184.3
점도 / Viscosity cp(20°C)	1,156	0.503	0.569	0.856	1,540
비점 / Boiling PT °C	141.3	80.3	99.5	148.0	213.5
용점 / Freezing PT°C	13.5	< -76.5	< -71.2	< -64.6	< -90
착화점 / Flash PT °C	51	-3	9	38	84
잠열 / Latent Heat kcal/mol	10.8	7.9±0.4	8.3±0.4	9.1±0.5	10.3±0.5
비열 / Speci. Heat kcal/kg°C	0.50	0.48	0.47	0.46	0.46
중합열 / Heat of Polymerization kcal/mol	18.5	19~20	15.6	18.5	14.5
굴절율 (nD20)	1.4224	1.4003	1.4040	1.4156	1.4350
Refractive Index					
폭발하한 / Lel vol%	5.5	2.2	1.7	1.1	0.7
폭발상한 / Uel vol%	20.5	25	15.5	10	6.5
증기압 60°C	30	372	192	32	1.8
80°C	75	760	400	77	5.9
100°C	174	—	787	165	14.0
140°C	756	—	—	580	71.0

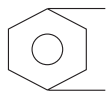
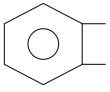
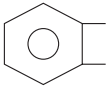
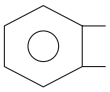
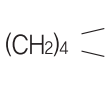
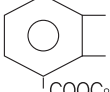
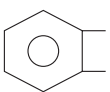
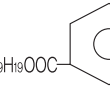


가소제 / Plasticizers

범용 가소제인 DOP와 GL, DINP, DIDP, DBP, TOTM 등 특수 가소제를 생산하여 PVC 가공업체에 공급하고 있으며, 세계최초 신물질인 Glycol계 LGflex EBN.W, LGflex BET를 개발, 상업화에 성공함으로써 세계제일의 가소제 메이커로서 변화하는 고객의 요구에 부응하고 있습니다.

LG Chem produces DOP and special plasticizers such as GL, DINP, DIDP, DBP and TOTM to PVC compounding customers. LG Chem developed LGflex EBN.W and LGflex BET, the world's first glycol plasticizer, exceeding customers needs as a world plasticizer maker.

●● 용도 / Application

제품/Products	화학식/Formula	용도/Uses	특성/Properties
LGflex GL300	 COOC ₈ H ₁₇ COOC ₈ H ₁₇	시트/Sheet 장갑/Gloves, 벽지/Wallpaper 완구/Toy	점도안정성 우수 /Excellent Viscosity Stability
LGflex GL100		전선/Cable 인조가죽/Leather	저휘발성/Low Volatility
Diocetyl Phthalate (LGflex DOP)	 COOC ₁₀ H ₂₁ COOC ₁₀ H ₂₁	인조가죽/Leather, 시트/Sheet 장갑/ Gloves 호스/Hoses 신발/Footwears 벽지/Wallpapers 지우개/Erasers	범용/Widely Used Plasticizers (Commodity)
Diisononyl Phthalate (LGflex DINP)	 COOC ₉ H ₁₉ COOC ₉ H ₁₉	전선/Cables 인조가죽/Leather	전기절연성/Electric Insulation 점도안정성 우수/Excellent Viscosity Stability
Diisodecyl Phthalate (LGflex DIDP)	 COOC ₁₀ H ₂₁ COOC ₁₀ H ₂₁	전선/Cables	저휘발성/Low Volatility, 전기절연성/Electric Insulation, 내열성/Heat Resistance
Diocetyl Adipate (LGflex DOA)	(CH ₂) ₄  COOC ₈ H ₁₇ COOC ₈ H ₁₇	호스/Hose 인조가죽/Leather, 시트/Sheet	내한성/Low Temperature Resistance, 상용성/Compatability
Triocetyl Trimellitate (LGflex TOTM)	 COOC ₈ H ₁₇ COOC ₈ H ₁₇ COOC ₈ H ₁₇	고온전선/Cables(High Temp)	내열성/Heat Resistance, 저휘발성/Low Volatility 전기절연성/Electric Insulation, 내이행성/Migration Resistance
Dibutyl Phthalate (LGflex DBP)	 COOC ₄ H ₉ COOC ₄ H ₉	도료/Paints 접착제/Adhesives	상용성 및 가소화 효율 우수 /Excellent Compatability and Plasticized Efficiency
LGflex EBN.W		식품포장용 Wrap/Food Package Wrap	점착성/Adhesion, 투명성/Transparency, 식품포장용 규격 인증/Food Package Certification
LGflex BET		자동차 내장제/Car Sheet 인조가죽/Leather 완구/Toy	냄새 우수/Odorlessness, 내이행성/Migration Resistance 저휘발성/Low Volatility
Triisononyl Trimellitate (LGflex TINTM)	 C ₉ H ₁₉ COO COOC ₉ H ₁₉ COOC ₉ H ₁₉	전선/Cable, Wire	내노화성/Aging Resistance 내유성/Oil Resistance 내이행성/Migration Resistance

●● 제품규격 / Specifications

Products Item	Unit	LGflex GL300	LGflex GL100	LGflex DOP	LGflex DINP	LGflex DIDP	LGflex DOA	LGflex TOTM	LGflex DBP	LGflex EBN.W	LGflex BET
Color Apha	APHA	20 Max	20 Max	20 Max	25 Max	30 Max	20 Max	30 Max	20 Max	100 Max	100 Max
Specific Gravity	20/20℃	0.984± 0.003	0.976± 0.003	0.986± 0.003	0.975± 0.003	0.968± 0.003	0.927± 0.003	0.990± 0.003	1.048± 0.003	0.991~ 0.997	1.007~ 1.013
Acid Value	KOHmg/g	0.02 Max	0.03 Max	0.02 Max	0.03 Max	0.03 Max	0.03 Max	0.1 Max	0.03 Max	0.2 Max	0.2 Max
Acid Value After Heating	KOHmg/g	0.07 Max	0.07 Max	0.07 Max	0.07 Max	0.07 Max	0.10 Max	0.10 Max	0.06 Max	0.5 Max	0.5 Max
Ester Value	—	287±3	—	287±2	268±3	251±3	302±3	307±2	403±3	—	—
Refractive Index (25℃)	nD25	1.487± 0.003	1.486± 0.003	1.485± 0.003	1.485± 0.003	1.485± 0.003	1.446± 0.003	1.486± 0.003	1.491± 0.003	—	—
Heat Loss	WT%	0.07 Max	0.07 Max	0.07 Max	0.07 Max	0.07 Max	0.10 Max	0.10 Max	0.4 Max	1.0 Max	1.0 Max
Volume Resistivity (30℃)	Ω·cm	2.0X10 ¹¹ Min	2.0X10 ¹¹ Min	2.0X10 ¹¹ Min	3.0X10 ¹¹ Min	5.0X10 ¹¹ Min	5.0X10 ¹¹ Min	5.0X10 ¹¹ Min	—	—	—

●● 물성치 / Physical Properties

Products Item	Unit	LGflex GL300	LGflex GL100	LGflex DOP	LGflex DINP	LGflex DIDP	LGflex DOA	LGflex TOTM	LGflex DBP	LGflex EBN.W	LGflex BET
M.W.	—	391	404	391	419	447	371	547	278	383	490
Viscosity(20℃)	cp	82	85	80	76	110	14	324	20	18	164
Boiling Point(760mmHg)	℃	400	400~416	386	400	420	335	275~287	335	337	346
Freezing Point	℃	-48	-45	-55	-49	-53	-70	-30	-35	-21	-41
Flash Point	℃	238	252	206	213	224	196	246	165~170	220	230

●● 물성비교 / Comparative Physical Properties

(범례) ● : 아주우수 ◎ : 우수 ○ : 양호 △ : 미흡

Products Item	LGflex GL300	LGflex GL100	LGflex DOP	LGflex DINP	LGflex DIDP	LGflex DOA	LGflex TOTM	LGflex DBP	LGflex EBN.W	LGflex BET
Compatibility	○	○	●	○	○	●	△	●	●	△
Plasticizer Efficiency	○	○	●	○	○	●	△	●	●	△
Low Temperature Resistance	○	○	○	○	○	●	○	○	△	△
Volatility Resistance	○	◎	○	○	◎	△	●	△	△	◎
Heat & Light Stability	○	○	○	○	◎	△	●	○	◎	◎
Oil Resistance	○	○	○	△	◎	○	●	△	△	○
Water Resistance	○	○	○	○	○	○	◎	△	△	○
Migration Resistance	○	○	○	△	◎	△	●	○	△	○
Electric Insulation	○	○	○	○	○	△	◎	△	○	○
Viscosity Stability	◎	○	○	○	○	◎	△	◎	○	○
Aging Resistance	○	○	○	○	◎	○	●	○	△	○

●● 응용특성 / Applied Properties

(배합) PVC 100 | 가소제 50 | 안정제 1 / (시험방법) 휘발감량 : 160℃ Gear Oven test

Products		Item									
		LGflex GL300	LGflex GL100	LGfle x DOP	LGflex DINP	LGflex DIDP	LGflex DOA	LGflex TOTM	LGflex DBP	LGflex EBN.W	LGflex BET
Modulus	50%	63	65	55	61	72	41	76	39	46	74
(kg/cm²)	100%	104	105	97	102	108	71	120	60	72	82
Tensile Strength(kg/cm²)		230	235	225	237	238	205	235	207	220	238
Elongation Rate(%)		405	410	400	412	410	460	410	435	445	415
Flexible Temperature (Clash Berg)°C	G=3.17X10³kg/cm²	-8	-9	-10	-11	-12	-37	-1	-12	-15	-13
Volatile Lose(%)	1hr	3.8	2.2	6.2	2.5	1.2	11	0.23	15.8	8	2.6
	2hr	7.2	4.7	11.9	5.2	2.4	22.3	0.46	21	17.2	5

알콜 / Alcohols

순도 99.5% 이상의 옥탄올, 노말부탄올, 이소부탄올을 생산하여 국내외 시장에서 그 품질을 인정받고 있으며, 최신 공정인 액체 순환공정(Liquid Recycle Process)을 도입하여 국내외 시장에 안정적인 원료 공급자로서의 역할을 수행하고 있습니다.

LG Chem produces alcohol (octanol, normal butanol, iso butanol) with purity of over 99.5% and has been recognized for its quality in the markets at home and abroad. In addition, the up-to-date 'Liquid Recycle Process' has been introduced in order to meet the increasing demand.

용도 / Application

제품/Products	화합식/Formula	용도/Uses
2-Ethylhexyl Alcohol (2-EH) 옥탄올	$\begin{array}{c} \text{CH}_3(\text{CH}_2)_3\text{CHCH}_2\text{-OH} \\ \\ \text{CH}_2\text{CH}_3 \end{array}$	가소제 / Plasticizers, 안정제 / Stabilizers 용제 / Solvents, 아크릴레이트 / Acrylates
Normal Butyl Alcohol (N-BUOH) 노말부탄올	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{-OH}$	용제 / Solvents, 접착제 / Adhesives 세제 / Detergents, 가소제 / Plasticizers 아크릴레이트 / Acrylates
Iso Butyl Alcohol (I-BUOH) 이소부탄올	$\begin{array}{c} \text{CH}_3\text{CHCH}_2\text{-OH} \\ \\ \text{CH}_3 \end{array}$	가소제 / Plasticizers 아미노수지 / Amino Resin Isobutyl Acetate, 용제 / Solvents

제품규격 / Specifications

제품/Products	단위/Unit	2-EH 옥탄올	N-BUOH 부탄올	I-buoh 이소부탄올
순도/Purity	WT%	99.7 Min	99.5 Min	99.5 Min
색도/Color	APHA	10 Max	10 Max	10 Max
비중/SP. GR.	(20/20℃)	0.832~0.834	0.810~0.812	0.802~0.804
수분/Water	WT%	0.05 Max	0.05 Max	0.10 Max
산도/Acidity	WT%	0.015 Max	0.002 Max	0.002 Max
알데히드/Aldehydes	WT%	0.05 Max	0.05 Max	—
황산색도/H ₂ SO ₄ Color	APHA	20 Max	15 Max	—

물성치 / Physical Properties

제품/Products	단위/Unit	2-EH 옥탄올	N-BUOH 부탄올	I-buoh 이소부탄올
특성치/Property				
분자량/M. W.		130	74	74
점도/Viscosity	cP(20℃)	9.8	2.8	3.8
비점/Boiling Point	℃	185	117	108
응점/Freezing Point	℃	-76	-89	-108
착화점/Flash Point	℃	73	29	28
발화점/Auto Ignition Temperature	℃	230	343	415
잠열/Latent Heat	kcal/kg	80.6	141.8	133.0
비열/Speci. Heat	kcal/kg℃	0.595	0.533	0.573
폭발하한/LEL	VOL%	0.9	1.4	1.7
폭발상한/UEL	VOL%	9.7	11.2	9.8
임계압력/Critical Pressure	kg/cm ²	31.3	45	46.7
임계온도/Critical Temperature	°K	65.3	563	543

무수프탈산 / Phthalic Anhydride



프랑스 ATOCHEM-일본 촉매화학(주)의 최신 무수프탈산 제조기술을 도입하여 1992년 10월 여수석유화학 단지에서 무수프탈산 공장을 준공하였으며, 고순도의 품질로 국내외 가소제, 수지, 염료, 페인트 등의 연관산업에 안정적으로 공급하고 있습니다.

LG Chem started to produce its high purity phthalic anhydride in Yeosu Complex in October 1992 using ATOCHEM/NIPPON SHOKUBAI process. PA is widely used in the manufacture of paints, inks and coatings, unsaturated polyester resins, plasticizers and pigments.

 용도 / Application

제품/Products	화합식/Formula	용도/Uses
Phthalic Anhydride 무수프탈산(PA)		프탈산계 가소제(DOP,DBP등),도료(프탈산알키드수지), 폴리에스테르수지 염료중간물(프탈아미드,프탈산나트릴, 안식향산)테레프탈산, 의약품, 향료 등

제품규격 / Specifications

Item	Unit	Guaranteed
Purity	WT%	Min 99.8
Melting Point	°C	Min 130.8
Color	APHA	Max 20
Thermal Color	APHA	Max 40
Acidity	WT%	Max 0.1

물성치 / Physical Properties

Item	Unit	물성값
Molecular Weight	148.1	148.1
SP. GR	4°C	1.527
	135°C	1.208
	140°C	1.202
	160°C	1.181
	180°C	1.161
	200°C	1.142
	220°C	1.124
	240°C	1.105
255°C	1.089	
Freezing Point		131
Boiling Point		284.5
Flash Point		151
Heat Capacity	25°C	0.2578
	125°C	0.3307
	150°C	0.4060
Latent Heat		15.6
Sublimation Heat		21.2
Fusion Heat		5.6
In Water		아주 적게 녹음 적게 녹음 녹음 녹음
In Ethyl Ether		
In Ethyl Alcohol		
In Benzene		

이소프로필 알콜 / Isopropyl Alcohol

우수한 품질과 뛰어난 용제특성을 갖추어 다양하게 사용됩니다

프로필렌의 직접수화 공정을 통해 생산되는 Isopropyl Alcohol은 뛰어난 용제 특성을 보유하여 용제산업의 다양한 요구에 부응하고 있으며, 도료 및 잉크, 의약품, 계면 활성제 등으로 폭넓게 활용하고 있습니다.

Isopropyl Alcohol(IPA) is extensively used because of its excellent quality characteristics and outstanding solvent properties.

LG IPA, produced by the direct hydration process of propylene, has excellent solvent properties which meets various demands of solvent industry. LG IPA is widely used in areas such as paints, inks, medical supplies and surface-active agents.

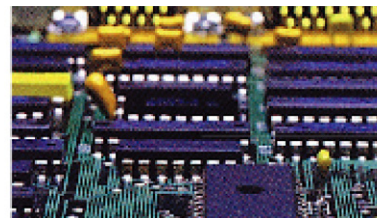


●● 용도 / Application

제품/Products	분자식/Formula	용도/Uses
이소프로필알콜 IPA	$\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_3$	용제 / Solvent Applications 중간체 / Chemical Intermediates 제약 / Pharmaceuticals 아세톤 제조 / Acetone
고순도 이소프로필알콜 HP-IPA	$\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_3$	반도체 및 LCD 제조용 세정제 / Cleaning for Semiconductor and LCD

●● 물성치 / Physical Properties

분자량/Molecular Weight	점도/Viscosity cP (20°C)	비점/Boiling Point (°C)	응점/Freezing Point (°C)
60.09	2.2	82.4	-89.5
착화점 Flash Point (°C)	자연발화 Auto Ignition Temperature(°C)	잠열 Latent Heat (kcal/kg)	비열 Specific Heat (kcal/kg°C)
13	425	161.6	0.596
폭발하한 Lel (vol%)	폭발상한 Uel (vol%)	압력 Critical Pressure (atm)	온도 Critical Temp.(°C)
2.0	12.0	53	253.6



●● 제품규격 / Specifications

	항목 / Test Item	단위 / Unit	제품규격 / Specification		
			IPA	HP-IPA	SHP-IPA
일반항목 General items	Assay (CH ₃) ₂ CHOH	wt%	Min 99.8	Min 99.99	Min 99.99
	Color	APHA	Max 5	Max 5	Max 5
	Specific Gravity	20/20°C			0.786-0.787
	Residue After Evaporation	ppm	15	Max 1	Max 1
	Water (H ₂ O)	ppm	Max 500	Max 100	Max 50
	Acidity (as CH ₃ COOH)	ppm	Max 10	Max 10	Max 5
	Acetone	ppm			Max 5
	N-Propanol	ppm		Max 10	Max 10
	Specific Resistance	MΩ.Cm		Min 1,000	Min 1,000
	Storage Temp.	°C	-20~40	-20~40	-20~40
	Life Time	Months	12	12	12
염류 Salts	Chloride (Cl)	ppb		Max 50	Max 5
	Sulfate (SO ₄)	ppb		Max 100	Max 4
	Phosphate (PO ₄)	ppb		Max 50	Max 8
	Nitrate (NO ₃)	ppb		Max 500	Max 4
금속류 Metals	Silver (Ag)	ppb		Max 0.5	Max 0.1
	Aluminum (Al)	ppb		Max 0.5	Max 0.1
	Arsenic (As)	ppb			Max 0.1
	Gold (Au)	ppb			Max 0.1
	Boron (B)	ppb			Max 0.3
	Barium (Ba)	ppb			Max 0.1
	Calcium (Ca)	ppb		Max 0.5	Max 0.2
	Cadmium (Cd)	ppb		Max 0.5	Max 0.1
	Cobalt (Co)	ppb		Max 0.5	Max 0.1
	Chromium (Cr)	ppb		Max 0.5	Max 0.1
	Copper (Cu)	ppb		Max 0.5	Max 0.1
	Iron (Fe)	ppb		Max 0.5	Max 0.3
	Gallium (Ga)	ppb			Max 0.1
	Germanium (Ge)	ppb			Max 0.1
	Potassium (K)	ppb		Max 0.5	Max 0.1
	Lithium (Li)	ppb		Max 0.5	Max 0.1
	Magnesium (Mg)	ppb		Max 0.1	Max 0.1
	Manganese (Mn)	ppb		Max 0.1	Max 0.1
	Sodium (Na)	ppb		Max 0.5	Max 0.2
	Nickel (Ni)	ppb		Max 0.5	Max 0.1
	Lead (Pb)	ppb		Max 0.5	Max 0.1
	Silicon (Si)	ppb			Max 3.0
	Tin (Sn)	ppb			Max 0.1
	Strontium (Sr)	ppb		Max 0.1	Max 0.1
	Zinc (Zn)	ppb		Max 0.5	Max 0.1
	Particles ≥0.2μm	EA/ml			
	Particles ≥0.3μm	EA/ml		Max200	Max 100
	Particles ≥0.5μm	EA/ml		Max50	Max 20

네오펜틸 글리콜 / Neopentyl Glycol

당사에서 자체 개발한 신공정을 통해 고순도 제품을 생산하여 분체도료, 불포화수지, 우레탄수지, 알키드수지 등의 원료로 공급하고 있습니다. NPG는 대칭형인 2개의 알킬기와 베타-Carbon 위치에 methyl기를 가지고 있어 에스테르 반응에 탁월한 반응성을 보입니다.

당사는 NPG함량 100%인 Flake 형태와 무색 투명액체인 NPG 90%, Water 10% 함량의 Slurry 형태로 출하되고 있습니다.

LG Chem produces high-purity of NPG (Neopentyl Glycol) by self-developed manufacturing process. NPG is an important intermediate used in the production of polyester resin, urethane resin and alkyd resin. Having two symmetric alcohol groups and two methyl groups in the beta-carbon position, NPG provides excellent reactivity to esterification. LG Chem supplies two forms of NPG- Flake (100% of NPG) and Slurry (90% of NPG and 10% of water)

●● 용도 / Application

제품/Product	화학식/Formula	용도/Uses
NPG (Neopentyl Glycol) (2,2-Dimethyl-1,3-propanediol)	$\begin{array}{c} \text{CH}_3 \\ \\ \text{HOH}_2\text{C} - \text{C} - \text{CH}_2\text{OH} \\ \\ \text{CH}_3 \end{array}$	Powder Coating Resins Alkyd Coating Resins Fiber Glass Reinforced Resins Polyester Polyols Plasticizers

●● 제품규격 / Specifications

항목/Items	Flake	90% Solution
Appearance	White	Clear Liquid
Purity wt %	Min 99.2	90±0.5
Color Apha (50% in Water)	Max 10	Max 10
Water Content wt %	Max 0.3	10±0.5
Acidity wt %	Max 0.01	Max 0.05
Aldehyde wt %	Max 0.05	Max 0.15

●● 물성치 / Physical Properties

항목/Items	Flake
Molecular Weight	104.15
Hydroxyl Funtionality	2
Hydroxy Number (KOH mg/g)	1070±20
Melting Point °C	128
Boiling Point °C(760mmHg)	210
Flash Point °C	103
Ignition Point °C	399
Solubility g/100g in H ₂ O(20°C)	520
Vapor Pressure Pa(20°C)	3
Specific Gravity 25°C	1.06

폴리카본산계 수용성 폴리머 / Aqueous polymer of polycarboxylate



LG화학은 첨단원료 합성공법을 이용하여 토목건축 분야에 사용되는 고성능 콘크리트 혼화제용 원료 4종을 독자기술로 생산하여 공급하고 있습니다.

지속적인 품질관리 및 용도 개발을 통해 우수한 제품을 공급하고자 최선의 노력을 다하고 있습니다.

With LG Chem's original high-tech synthetic process, we supply four types of raw materials for concrete admixture used for construction and civil engineering.

We are constantly pursuing to supply excellent products by quality control and developing new applications.

●● 용도 / Application

제품/Product	화학식/Chemical Formula	용도/Uses
CP-WRM CP-WBM CP-RS CP-ST	$\left[\text{CH}_2 - \underset{\text{COOM}}{\overset{\text{R}}{\text{C}}} \right]_x \left[\text{CH}_2 - \underset{\text{COO}(\text{CH}_2\text{CH}_2\text{O})\text{R}}{\overset{\text{R}}{\text{C}}} \right]_y$	LNG기지, 고속철도, 고속도로, 지하철공사, 터널, 교량 등의 SOC 구조물 (LNG Tank, Rapid transit railroad, Highway, Subway, Tunnel, bridge) 초고층빌딩 및 내구성이 요구되는 구조물 (High-rise buildings with high durability) 해안 구조물(Off-shore & Marine Structures) 조립식 Precast 및 Prestressed 콘크리트 제조 (Pre-cast & Pre-stressed elements)

●● 제품규격 / Specifications

제품/Product	CP-WRM	CP-WBM	CP-RS	CP-ST
용도/Uses	고성능 감수제 High range water reducer	유지형 감수제 Water reducer & retention	조기강도형 감수제 Early strength water reducer	고유지제 Super slump retention
외관/Appearance	진한갈색점조액 Deep brownish viscous liquid	진한갈색점조액 Deep brownish viscous liquid	옅은갈색점조액 Yellowish viscous liquid	옅은갈색점조액 Yellowish viscous liquid
고형분/Solid content(%)	40±1	40±1	40±1	40±1
PH(Undiluted)	7±1	7±1	6±1	6±1
점도/Viscosity(cPs)	190±40	160±40	300±40	220±40
비중/Specific gravity(20/4°C)	1.09±0.02	1.10±0.02	1.09±0.02	1.08±0.02
염소이온 함량 /Chloride content(%)	< 0.01	< 0.01	< 0.01	< 0.01
사용량(%), 20% 기준 /Dosage(%), 20% based	0.6 ~ 2.0	0.6 ~ 2.0	0.6 ~ 2.0	0.6 ~ 2.0
특징/Advantage	· 고감수형 콘크리트 분산 성능 · High water reducing (low W/C) · 작업성, 강도 개선 · Improved concrete setting time · 콘크리트 점성 저하 능력 · Less concrete viscosity · 경제적인 콘크리트 설계 · Economical design	· 콘크리트 유지성능 우수 · Less slump loss · 감수성 우수 · Water reducing (low W/C) · 작업성 우수 · Good workability	· 콘크리트 Setting 시간 단축 · Early setting time · 조기강도 발현 · Early strength concrete · 감수성 우수 · Water reducing	· 혹서기 고슬럼프 유지 성능 · Super slump retention · 작업성 우수 · Good workability · 콘크리트 점성 저하 능력 · Less concrete viscosity · 감수제와의 상용성 우수 (WRM, WB) · Good combination with water reducer (WRM, WB, RS)

디메틸에테르, 디에틸에테르 / Dimethyl Ether, Diethyl Ether

DME는 Methanol을 원료로 제조되어 Spray, Paint, 시약 등의 원료로 사용되며, DEE는 DME 제조기술을 바탕으로 자체 개발한 제품으로 Ethanol을 원료로 제조되어 대부분 화학원료로 사용됩니다.

DME is produced from methanol and is used as spray, paint and reagent.
DEE is produced from ethanol using LG Chem's own technology and is widely used in gunpowder.

●● 용도 / Application

제품/Products	화학식/Formula	용도/Uses
Dimethyl Ether(DME) Diethyl Ether(DEE)	CH_3OCH_3 $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$	Aerosol, 분사제, 냉매, 농약원료 화학원료, 시약용

●● 제품규격 / Specifications

항목/Item	단위/Unit	DME	DEE
Purity	WT%	Min 99.9	Min 98.0
Carbon Dioxide	PPM	Max 100	
Free MeOH	PPM	Max 100	
Methyl Formate	PPM	Max 100	
Evaporation Residue	PPM	Max 20	
Specific Gravity(20°C)	—	0.67±0.01	Max 0.723
Moisture	PPM	Max 100	
Appearance	—	Colorless	
Non-Volatile Residue	PPM		Max 20
Acidity AS CH_3COOH	PPM		Max 20
Peroxide AS H_2O_2	—		Pass
Aldehyde	mg/100ml		Max 1.0
Acetylene	PPM		Max 10
Color	APHA		Max 20
Ethylene	WT%		Max 1.5
Water	WT%		Max 0.5

●● 물성치 / Physical Properties

항목/Item	단위/Unit	DME	DEE
Molecular Weight	—	46.07	74.14
Boiling Point	°C	-24.8	34.5
Freezing Poin	°C	-141.5	-116.3
Flash Point	°C	-41	-45
Auto Ignition Point	°C	350	180
Vapor Pressure	mmHg(20°C)	3.982	440
Vapor Density (Air=1)	—	1.56	2.55
Solubility in H ₂ O	WT%(20°C)	7	6.9
LEL	VOL%	3.45	1.9
UEL	VOL%	26.7	48.0
Evaporation Rate(BUAL=1)	—	209	37.5

고흡수성수지 / SAP



당사에서는 자체 무게의 수백 배에 해당하는 순수한 물을 흡수할 수 있는 기능을 가진 고분자 물질을 자체 개발된 용액 중합 생산 공정에 의해서 생산하고 있습니다.

고흡수성 수지는 유아용 기저귀, 여성 위생용품, 성인용 기저귀 산업에 사용되어 왔으며, 최근에는 보냉 및 보온용 pack, 농업용 수분 유지제, 전선용 수팽창 지수재, 폐기물 응고제, 식품용 포장재 산업의 원료로서 광범위하게 사용되고 있습니다.

LG Chem produces Super Absorbent Polymer by self-developed aqueous solution polymerization manufacturing process. Super Absorbent Polymer absorbs pure water at several-hundred times of its dry weight.

Super Absorbent Polymer are used extensively as the raw materials for various industry.

They find attractive commercial applications in baby diaper, feminine hygiene products, and adult incontinence products. Other emerging applications include pack, soil moistener in farming water stop, waste coagulant and food packaging.

●● 용도 / Application

제품/Products	화학식/Formula	용도/Uses
SAP (Super Adsorbent Polymer) (Sodium Polyacrylate, Cross-linked)		기저귀(유아, 성인) / Diaper 여성용품 / Sanitary Napkins 보냉, 보온 팩 / Pack(Inc, Hot) 토양 보습제 / Soil moistener 수팽창 지수제 / Water Stop 폐기물 응고제 / Waste Coagulant 식품포장용 / Packaging

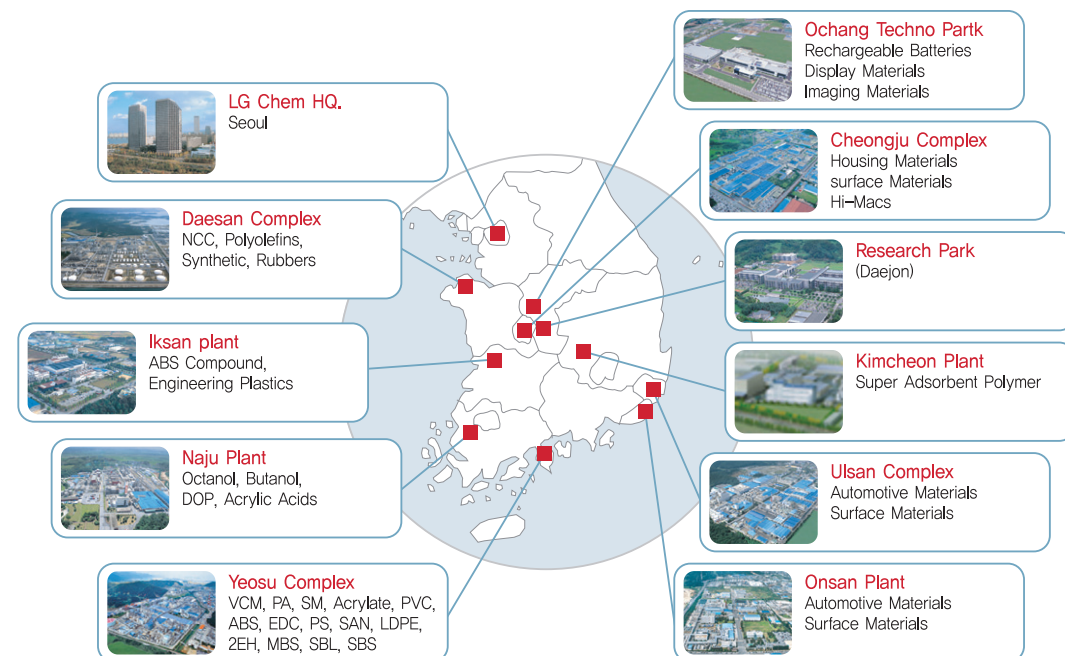
●● 제품규격 / Specifications

항목/Item	단위/Unit	Thick Diaper	Thin Diaper	Adult&Feminine
Bulk Density	g/ml	0.6~0.8	0.6~0.8	0.6~0.8
Centrifuge Retention Capacity	g/g	Min 33	Min 29	Min 35
Absorbency Under Load(psi)	g/g	Min 25 (0.3)	Min 22 (0.7)	Min 25 (0.3)
Particle Size Distribution(Over 850μm)	%	Max 1.0	Max 1.0	Max 6.0(Over 600μm)
Particle Size Distribution(Under 150μm)	%	Max 3.0	Max 3.0	Max 3.0

항목/Item	단위/Unit	Pack&Packaging	Water Stop	Others
Bulk Density	g/ml	0.6~0.8	—	0.6~0.8
Free Absorbency	g/g	Min 46	Min 200 (H ₂ O)	Min 60
Absorbency Under Load(psi)	g/g	Min 18 (0.7)	—	—
Particle Size Distribution(Over 850μm)	%	Max 1.0	Max 5.0(Over 300μm)	Max 1.0
Particle Size Distribution(Under 150μm)	%	Max 3.0	Max 20(Under 90μm)	Max 3.0

Domestic Network

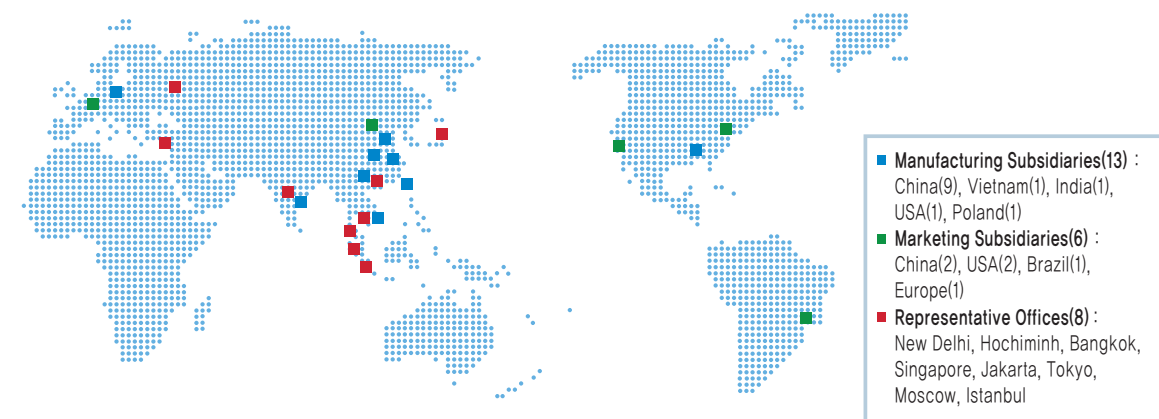
LG Chem has 9 plants and 1 Research Institute



- **LG Chem Brasil Ltd. Seoul – Headquarters**
LG Twin Towers 20, Yeouido-dong, Yeongdeungpo-gu, Seoul, 150-721, Korea(REP)
- **LG Chem Research Park – Daejeon – R&D Center**
104-1, Munji-dong, Yuseong-gu, Daejeon, 305-380, Korea(REP)
- **Yeosu Plant – Yeosu**
70-1, Hwachi-dong, Yeosu-si, Jeollanam-do, 555-280, Korea(REP)
754, Jungheung-dong, Yeosu-si, Jeollanam-do, Korea(REP)
- **Naju Plant – Naju**
1, Songwal-dong, Naju-si, Jeollanam-do, 520-130, Korea(REP)
- **Ulsan Plant – Ulsan**
388, Manyang-ri, Onnyang-myeon, Ulju-gun, Ulsan, 689-900, Korea(REP)
- **Gimcheon Plant – Gimcheon**
1348-1, Daekwang-dong, Gimcheon-City, Kyung-Buk, 740-170, KOREA(REP)
- **Daesan Plant – Daesan**
679-13, Daejuk-ri, Daesan-eub, Seosan-si, Chungcheongnam-do, 520-130, Korea(REP)
- **Iksan Plant – Iksan**
599, Yongje-dong, Iksan-si, Jeollabuk-do, 570-350, Korea(REP)
- **Cheongju Plant – Cheongju**
150, Songjeong-dong, Heungduk-gu, Cheongju-si, Cheungcheongbuk-do, 361-721, Korea(REP)
- **Ochang Plant – Ochang**
8B Ochang Scientific Local Industrial Complex 1114-Namchon-ri Oksan-myeon, Cheongwon-gun, Chungcheongbuk-do, 363-911, Korea(REP)
- **Onsan Plant – Onsan**
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Global Network

28 Subsidiaries around the world



Marketing Subsidiaries and Representative offices

- **USA**
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 - ▶ LG Chem America, Inc. Los Angeles Office
17777 Center Court Drive Suite 675, Cerritos, CA 90703, USA, Tel : 1-562-653-8090, Fax : 1-562-653-8096
- **South America**
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- **Europe**
 - ▶ LG Chem Europe GmbH, Frankfurt Office
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 - ▶ LG Chem Ltd. Moscow Office
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 - ▶ Turkey Istanbul Office
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