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### Historical recipes for preparatory layers for oil paintings in manuals, manuscripts and handbooks in North West Europe, 1550-1900: analysis and reconstructions

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## Appendix 18 Tables belonging to Chapter 11

**Table 11.1: Glue preparation details**

<i>source</i>	<i>date</i>	<i>page</i>	<i>name of glue</i>	<i>purpose</i>	<i>collagen source (original text)</i>	<i>other materials</i>	<i>pre-treatment</i>	<i>heating time</i>	<i>heating indication</i>	<i>after-treatment (summary)</i>	<i>preparation details</i>	<i>strength test</i>
'Liber illuministarum'	c.1500	171	<i>varb leim</i>	binding medium; ground	<i>schnicz von einem pergamentler</i> [cuttings from a parchment maker]	Water		until a hand width is left over	<i>sieden</i> [boil]	pour through straw or cloth; leave for half hour, remove froth, let stand half hour, pour off good glue, use		
Borghini	1584	40	<i>colla di limbellucci</i>		<i>mozzature di carta pecora o di capretti, e massime de 'piedi e de' colli</i> [sheep parchment shavings and footbones and bones of young goats]	Water	washed	boiled down to 2/3		sieved		
Norgate	1648-50	91	Size	panel chalk ground								
King	c.1653-57	52	Glew	sizing panel								
'Art of painting in oyle'	1664	94	Size	for panel and canvas								
'Art of painting in oyle'	1664	94	Size	for panel and canvas	glover's shreds	Water			boil			
<i>Excellency</i>	1668	113	Glew	to wet canvas								cool to test; the meanest is best
Volpato	c. 1670	729	glue made of the	canvas	very young pigs' skins	water						good consistency,

<i>source</i>	<i>date</i>	<i>page</i>	<i>name of glue</i>	<i>purpose</i>	<i>collagen source (original text)</i>	<i>other materials</i>	<i>pre-treatment</i>	<i>heating time</i>	<i>heating indication</i>	<i>after-treatment (summary)</i>	<i>preparation details</i>	<i>strength test</i>
			parings of very young pigs' skins									soft like jelly when cooled
Salmon	1672	179	size (= liquid); glew (= dry)	for primed cloth		fair water						
Dionysios	1701-33	5	Glue	gesso	limed skins	clean water for boiling	soak in lukewarm water, wash		boil	boil until it coagulates/is ready, cool, cut into small pieces, leave on a board for 2 days, then hang on a string to dry completely	boil, when it thickens, strain off liquid, add new, do this 2–3 times. Only prepared in cold weather	
Dionysios	1701-33	5	Glue	gesso	skin from feet or ears of oxen, and any skins that cannot be put to any other use or are of little value; if they are thick it does not matter; buffaloes and ewes are also good	clean water for boiling	soak 1 week in quicklime and water to remove hairs, wash and keep for further use as above		boil	boil until it coagulates/is ready, <sup>819</sup> cool, cut into small pieces, leave on a board for 2 days, then hang on a string to dry completely	boil, when it thickens, strain off liquid, add new, do this 2–3 times. Only prepared in cold weather	
Dionysios	1701-333	5	Glue	gesso	unlimed skins, if you are in a hurry	clean water for boiling	soak and boil short time, clean of any fat and flesh		boil	boil until it coagulates/is ready, cool, cut into small pieces, leave on a board for 2 days, then hang on a string to dry completely	boil, when it thickens, strain off liquid, add new, do this 2–3 times. Only prepared in cold weather	
Dionysios	1701-	6	dried glue	gesso		Water	soak overnight		boil until			

<sup>819</sup> Bentschev 2004 translates this as 'is ready', Hetherington 1974 (reprint 1996) as 'coagulates'.

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
	33						in cool place		dissolved			
Smith	1756	58	glew (= dry); size (= liquid)	sizing								moderate thickness
<i>École de la mignature</i>	1759	102	<i>colle de gants</i> [glove glue]		<i>un livre de rognure de gants</i> [a pound of glove clippings]	<i>12 pintes d'eau</i> [12 pints of water]	soak in water	reduced to 2 pints	<i>bouillir</i> [boil]	filter through linen		<i>ferme sous la main</i> [stiff below the hand]
Buc'hoz	1783	330, 331	<i>colle de gants</i>		<i>un livre de rognures de gants</i> [glove clippings]	<i>12 pintes d'eau</i> [12 pints of water]	soaked in water until soaked and well swollen	12 pints reduced to 2	<i>bouillir</i> [boil]	filter through linen		<i>un peu ferme sous la main lorsqu'elle est congelée</i> [a little firm below the hand when it is gelled]
Fokke Simonsz	1803	85	<i>Handschoe nlijm</i>	ground	<i>een pond handschoensnippers</i> [a pound of glove clippings]	<i>twalf vierendeelen water</i> ['twelve fourths' water]	soak in water for some time	until 12/4 reduced to 2/4	boil	filter through new linen cloth		when cold it must be stiff and strong below the hand
Tingry	1803	260-2, 264	<i>First quality glue</i>	<i>Colle sans couleur. Défendre des atteintes du vernis les peintures délicates, les papiers colorés, les peintures à la</i>	<i>baguettes contournées de cette matière membraneuse</i> [twisted 'sticks' of their membranous matter]	<i>Eau pure</i> [pure water]				Sieve through linen, evaporate over slow fire until small amount forms trembling jelly.		Small amount on paper in cool place must form trembling jelly

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
				<i>gomme, etc.</i> [ glue without colour] [protect delicate paints from varnish, coloured papers, paintings with gum, etc.]								
Tingry	1803	262-3	<i>Second quality glue</i>	All purposes that require cleanliness, it may replace fish glue. For sizing and tempering 'chipolin' <sup>820</sup> and 'blanc de roi'.	<i>Rognures de parchemin</i> [parchment clippings]	<i>Eau pure</i>	Soak in warm water for 12-15 hours	5-6 hours		Sieve through clean linen or horsehair sieve, leave to settle, remove clear part from settled particles,		Forms trembling jelly
Tingry	1803	263-4	<i>Third quality glue/ colle commune</i>	Distemper painting on ceilings, walls, wooden boards, etc. Objects that require solidity more than clean surfaces, common sizing.	<i>Rognures de peaux de moutons, de gants, de peaux de chèvres et des raclures de parchemin</i> [clippings of sheep skin, gloves, goat skins and clippings of parchment]	<i>Eau</i> (7-8 parts to 1 part of matter)		3-4 hours, until reduced a third		Pass through horsehair sieve or linen. Becomes strong gelly that may be weakened according to circumstances.		
Chaptal	1807	520	<i>colle forte</i> [strong glue]	binder for tempera	<i>rognures de peau et de parchemin, peaux épilées de lapin, lièvre et castor, etc.</i> [skin clippings and	<i>eau</i> [water]			until they see it forms gel when cool	<i>bouillir</i> [boil]		when cold it gels

<sup>820</sup> 'Chipolin' is a technique employed for interior decoration that consists of a coloured layer in distemper, covered with a varnish layer. Tingry 1803, vol 2: 285. 'Blanc de roi' is another decorative technique that consists of a basis of chalk and glue covered with a layer of pigments in varnish, polished with a cloth. Tingry 1803, vol 2: 290, 293.

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
					parchment, dehaired skins of rabbit, hare and beaver, etc.]							
Chaptal	1807	520	<i>colle forte</i> [strong glue]		<i>rognures des peaux et des cuirs, les pieds, la peau des têtes et des queues de quelques animaux, et avec les os eux-mêmes</i>  [clippings of skins and leathers, feet, the skin of heads and the tails of some animals, and with the bones themselves]  <i>les animaux vieux et maigres donnent une meilleure colle que les jeunes et les gras</i> [old and skinny animals give better glue than young and fat]							
Chaptal	1807	521, 522	<i>colle forte</i> [strong glue]	<i>peintres en détrempe, fabricans de drap et papetiers</i>  [tempera painters, linen manufacturers and paper makers]	<i>rognures de peau et de parchemin, peaux épilées de lapin, lièvre et castor, etc.</i> [skin clippings and parchment, dehaired skins of rabbit, hare and beaver, etc.]	<i>eau</i> [water]		until it coagulates upon cooling	<i>bouillir</i> [boil]			[when they notice that it coagulates upon cooling they stop boiling]
Chaptal	1807	522-7	<i>colle forte</i> [strong		<i>la matière</i> [production of <i>colle</i>	water	soak fresh skin 24 hours in vats, longer for dry	strength tested	heated to boiling temperature	pour over, leave to settle for 3 or 4 hours, pour into boxes to gel;	different qualities by using openings in boiling vessel at	drop on plate to check

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
			glue]		<i>forte</i> in factory]		skins; remove from water, wash in river, all skins washed separately, because not all need same treatment; limed, left long to remove fat, &c.; strong limewater removes hairs; washed in clear water		re	sliced, dried in open air, polished when nearly dry	different heights: highest tap yields best quality	consistency
Chaptal	1807	529, 530	<i>colle de Flandre</i> [Flanders glue]	tempera painters, &c.	<i>rognures de peaux de moutons, d'agneaux, et autres jeunes animaux, ainsi que celles de parchemin</i> [clippings of skins of sheep, lambs and other young animals, as well as of parchment]	<i>eau</i> [water]	washed carefully			left to settle for long time, cut into very thin slices that appear transparent		
Chaptel	1807	533, 534	<i>Colle de pieds de veau</i> [calf feet glue]	<i>ses usages dans les arts</i> [has its uses in the arts]	<i>pieds de veau</i> [calf feet]	<i>eau</i> [water]	feet put in boiling water, remove bones and meat and boil rest	strength checked	<i>eau bouillante</i> [boiling water]	filtered through linen, cooled slowly		when it forms a thick jelly upon cooling
Chaptal	1807	534	<i>colle de gant</i> [glove	gilders	<i>rognures des peaux blanches de gant</i> [clippings of white	<i>18 fois leur poid d'eau</i> [18 times its weight of		until reduced to half	<i>bouillir</i> [boil]	thickened depending on wishes	stirred continuously	

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
			glue]		glove leather]	water]						
Chaptal	1807	534	<i>colle de parchemin</i> [parchment glue]	gilders	<i>parchemin</i> [parchment]	18 fois leur poid d'eau [18 times its weight in water]		until reduced to half	<i>bouillir</i> [boil]	thickened depending on wishes	stirred continuously	
Sully	1809–1871	020	fish glue	ground canvas	isinglass (fish glue)	water	soaked a night in water, pounded to small pieces		put on the fire to boil			cool, forms into jelly
De Montabert	1829	171–2	<i>colles animales</i> [animal glues]	<i>très-souples et ... très-fines</i> [very supple and very fine]	<i>peau de lapin, parchemin, peau de mouton</i> [rabbit skin, parchment, sheep skin]							
De Montabert	1829	172, 173	<i>colle forte animale</i> [strong animal glue]	<i>pas la souplesse et délicatesse que requiert la peinture</i> [not the suppleness and delicacy required for painting] [when it gels its contracts and breaks, does not mix well with pigments]	<i>cartilages, nerfs, pieds, oreilles des taureaux, boeufs âgés, grands poissons, peaux de veau</i> [cartilage, nerves, feet, ears of bulls, old cows, big fish, calf skins]	<i>eau</i> [water]	<i>macerer</i> [chop]	<i>jusqu'à leur dissolution presque entière</i> [until they are almost fully dissolved]	<i>bouillir. à un feu doux</i> [boil on slow fire]	cool, thicken on fire, dry on flat polished stones, or in moulds		
De Montabert	1829	173	<i>colle animale moyenne,</i>	used by some painters, but not as flexible as	<i>matières plus souples et plus douces. ... rognures de peaux de</i>	<i>eau</i> [water]	[made in the same way as <i>colle forte</i> (pp. 172, 173)]					



source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
			<i>colle de Flandre</i>	<i>colle faible</i> [weak glue]	<i>moutons, d'agneaux, etc.</i>							
			[animal glue of average strength, Flanders glue]		[more supple and softer materials ... clippings of sheep, lamb skins, etc.]							
De Montabert	1829	173 -4	<i>colle faible animale; colle de gants, colle de parchemin, colle de brochette</i>		<i>rognures de peaux blanches de mouton</i> [clippings of white sheep skins]		<i>macerer</i> [chop]	<i>4 heures</i> [4 hours]	<i>dissoudre ces rognures dans de l'eau bouillante</i> [dissolve these clippings in boiling water]	leave in warm water, filter		<i>refroidie, doit avoir la consistance d'une forte gelée</i> [when cool, must have the consistency of a strong jelly]
De Montabert	1829	174	<i>colle animale très-faible</i> [very weak animal glue]		<i>rognures de parchemin, peaux de lapin, peaux d'anguilles, etc.</i> [parchment clippings, rabbit skins, eel skins, etc.]	eau [water]			ebullition [boiling]	reduce to form gel, filter, leave to clarify, add a little honey	takes longer to prepare than glove glue	
Field	1850	129	Size		shreds of parchment &c.; glue	cold water	soaking in cold water		boiling; dissolving by heat			

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
Williams	1855	10		sizing muslin	parchment cuttings							
Hopman	1856	53	<i>Engelse lijm, formaatlijm</i> [English glue, 'formaat' glue]		<i>ossen- en kalfspooten, vellen en dergelijken afval</i> [ox and calf legs, skins and similar waste]							
Hopman	1856	53	<i>Leidsche or witte lijm</i> [Leiden or white glue]	<i>zwakker van lijmstof ... die gene sterke lijm behoeven</i> [weaker than English glue, for objects when no colour is wanted]								
Hopman	1856	53, 54	<i>perkamentlijm</i> [parchment glue]		<i>snippers van perkament</i> [parchment clippings]	<i>regenwater</i> [rain water]		3 hours	<i>kookt</i> [boils]	leave to settle, cut into plates, dry in sun	stir continuously, pour off. Use remaining parchment with new water, but less water. After boiling add to first glue. Reduce on fire	drop on cold plate or stone must become stiff
Hassall	1857	462-4	gelatine		best quality: skins of calves' heads, procured after liming to remove hair	water, common salt	washed to remove lime, flesh and fat cut out, sometimes soaked in muriatic acid,	12 hours	boiled	strained and clarified with egg whites, run onto glass, cut into slices, dried on nets in warm room. Cold room leads to air	one gallon of water to seven pounds of skin; a small quantity of common salt is added to preserve the	

<i>source</i>	<i>date</i>	<i>page</i>	<i>name of glue</i>	<i>purpose</i>	<i>collagen source (original text)</i>	<i>other materials</i>	<i>pre-treatment</i>	<i>heating time</i>	<i>heating indication</i>	<i>after-treatment (summary)</i>	<i>preparation details</i>	<i>strength test</i>
							but this is injurious; cut up, then you don't have to boil as long = economical and better glue			bubbles on surface	gelatine	
Field and Mallet	1870	210	Size		shreds of vellum				boiling			
Sully	1873	035-6	isinglass	sizing	isinglass	water	soaked a night in water, pounded into small pieces		boiled	cool		as much isinglass to the water as wil form a jelly
Spon	1883	341-2	common glue		hooves, horns, and cuttings of the hides of various animals	water	steeped in water for 2 or 3 days		boiled	passed through osier baskets, allowed to stand to purify, melted, boiled second time, poured into moulds, cut into square pieces and dried in the wind on net		consistency of a thick jelly
Spon	1883	342	common glue		substances intended for the glue-maker		macerated with milk of lime for 14 days, air-dried		gentle but steady boil	clear portion run off, small quantity of dissolved alum added, kept warm to form deposit, run into boxes, cooled, cut and dried on nets. Cakes dipped in hot water and rubbed with a brush to give them	after clear portion is run off, more water is added and process is repeated until no more gelatine can be extracted	on cooling forms a firm gelatinous mass

source	date	page	name of glue	purpose	collagen source (original text)	other materials	pre-treatment	heating time	heating indication	after-treatment (summary)	preparation details	strength test
										gloss, stove-dried		

**Table 11.2: Animal glue sizing layer application details**

author/source	date	page	glue use	for support	tool	glue description (in original text and in translation)	negative result (summarised from recipe)	size layers	pumicing of size layer (summarised from recipe)
'Liber illuministarum'	c.1500	182, 813, ms. p. 106 v	size for oil paint	panel	hand or brush	<i>varb leim</i> [paint glue]		until wood becomes a little smooth [gleissen]	
Vasari	1550 (1568)	52	seal ground	panel, canvas	<i>ispunga</i> [sponge]	<i>dolcissima colla</i> [the smoothest size]		4 or 5	
Vasari	1550 (1568)	53	size	canvas		<i>colla, che sia dolce</i> [smooth size]		3 or 4	
Armenini	1587	124-5	isolation ground	canvas		[soft glue]		2 or 3	
De Mayerne	1620–44	5	size	canvas		<i>colle de retailles de cuir ou size qui ne soit pas trop espaisse</i> [leather clippings glue or size which is not too thick]		1	
De Mayerne	1620–44	7v	size	canvas		<i>couche de colle, adjoustés ... un petit de mie</i> [glue layer, add a little honey]	flakes due to hygroscopicity		
De Mayerne	1620–44	11	size	canvas		<i>colle de cuir de veau, ou de cheurotin. Si la colle est trop forte la toile se fend &amp; se rompt aisement</i> [calf leather glue, or cheurotin. If the glue is too strong the canvas deforms]	de Mayerne writes concerning this recipe of Latombé that he saw one of Latombé's paintings which flaked, so de Mayerne concludes that an oil ground should be used	1	while wet place on marble and with the muller flatten all seams and all knots

<i>author/ source</i>	<i>date</i>	<i>page</i>	<i>glue use</i>	<i>for support</i>	<i>tool</i>	<i>glue description (in original text and in translation)</i>	<i>negative result (summarised from recipe)</i>	<i>size layers</i>	<i>pumicing of size layer (summarised from recipe)</i>
						and breaks easily]	instead		
De Mayerne	1620– 44	87	size	canvas	<i>couteau</i> [knife]	<i>colle forte</i> [strong glue]	flakes	1	
De Mayerne	1620– 44	87	size	canvas		<i>colle de rataillons de cuir, non trop fort</i> [leather clippings glue, not too strong]		1	
De Mayerne	1620– 44	90	size	canvas	<i>brossette, couteau</i> [brush, knife]	<i>colle forte</i> [strong glue]	flakes	1	
De Mayerne	1620– 44	96	size	canvas		<i>colle forte</i> [strong glue]	flakes	1	
De Mayerne	1620– 44	98v	size	canvas	<i>baignée et plongée</i> [bathed and dipped]	<i>colle de cuir des roigneurs de gantz, encore toute liquide, fondue ou chaude. ... l'imbibet et l'encoler par toute. Figée on traine dessus avec une corne ou amassete pour boucher les petitz trous de la toile</i>  [glue of glove clippings, fully liquid, heater or warm ... [to] saturate and fully glue. When gelled a bone or spatula is drawn over to fill little holes in the canvas]		1	
De Mayerne	1620– 44	99	size	panel		<i>legerement encolé</i> [lightly glued]		1	
Ms. Sloane 1990	1623– 1644	78/79	size	canvas		<i>coller</i> [glue]		1	
Ms. Sloane 1990	1623– 44	78/79	size	canvas		<i>coller, tendre</i> [glue, soft]		1	

<i>author/ source</i>	<i>date</i>	<i>page</i>	<i>glue use</i>	<i>for support</i>	<i>tool</i>	<i>glue description (in original text and in translation)</i>	<i>negative result (summarised from recipe)</i>	<i>size layers</i>	<i>pumicing of size layer (summarised from recipe)</i>
Bate [in Talley 1981]	1633 (1654)	172	size	canvas		<i>size, little honey</i>			
Lebrun	1635	772	size	canvas		<i>colle de parchemin</i> [parchment glue]			
Pacheco	1649	382-3	size	panel		<i>Giscola de guantes con sus ajos no mui fuerte</i> [glue size that is not too strong and with garlic added]		1	
Pacheco	1649	383-4	size	canvas		<i>Cola de guantes</i> [size from glovers' scraps]		1	
Pacheco	1649	384-5	size	canvas	knife	<i>cola de guantes flaca ... estando elada</i> [weak size that is cooled and jelled]		1	pumiced after it has dried. Canvas may be pumiced before sizing application to remove knots
Symonds	1650– 52	fol. 5	size	panel		<i>una mano di colla</i> [a layer of glue]		1	
Symonds	1650– 52	fol 4v	size	canvas	<i>un ferro</i> [a knife]	<i>la colla</i> [the glue]		1	<i>rascia la tela con un ferro</i> [scrape canvas with an iron]
Symonds	1650– 52	fol 4v	size	canvas	knife	this size, either of glove cuttings or of glew [this glue, either of glove clippings or of dry glue]		1	<i>rascia la tela con un ferro</i> [scrape canvas with an iron]
King	c.1653– 57	52	size	panel		glew with as much water as being cold it makes a weake size, warm		1	

<i>author/ source</i>	<i>date</i>	<i>page</i>	<i>glue use</i>	<i>for support</i>	<i>tool</i>	<i>glue description (in original text and in translation)</i>	<i>negative result (summarised from recipe)</i>	<i>size layers</i>	<i>pumicing of size layer (summarised from recipe)</i>
'Art of painting in oyle'	1664	94	size			glew, weake size			
'Art of painting in oyle'	1664	94	size			glovers' shreds			
'Art of painting in oyle'	1664	95, 96	size	canvas	brush, knife	1 pint of thin size, almost a spoonful of honey 1st layer: when it is but warme size your cloth. Spread it on neither to thicke nor to thin 2nd layer: spread ...wth a knife very thin		2: 1st warm and liquid, 2nd cold and gelled	
Volpato	c. 1670	729	size	canvas		parings of very young pigs' skins Let it be neither too weak nor too strong ... the proper consistence will be soft like jelly when it is cooled	if too weak it will cause the colour to crack	2	pumice between coats
Volpato	c. 1670	729	size	canvas		such glues as parchment glue, being strong and harsh, cause a certain shrinking of the canvas	cause shrinking of canvas		
Volpato	c. 1670	731	size	canvas		simple glue			
Salmon	1672	178	size	canvas		size, and a little honey. Honey keeps it from cracking, peeling or breaking out		1	pumiced before sizing
Felibien	1676	407-8	size	canvas		<i>eau de colle</i> [glue water]		1	
Felibien	1676	407	size	panel	<i>brosse</i> [brush]	<i>encollé</i> [glued]		1	
Beale	1677	56r	size	canvas		very thinn size	Beale fears most that canvases sized with the thin size will sink in when primed with the stiff primer	1	

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							he intends to use		
Beale	1677	56r	size	canvas		very stiff size		1	
Eikelenberg	1679– 1704	403	size	panel	<i>strijkt</i> [brushed]	<i>lijm</i> [glue]		1	
Beurs	1692	17–20	size	panel, canvas		<i>lijmen</i> [glueing]			
Smith	1692	75	size	panel		strong sise		6 to 8	planed with joiner's plane, then water- planed with a rag
Hidalgo	1693	137	size	canvas		sizing made of glove clippings		2	
Dupuy du Grez	1699	243–4	size	canvas		<i>eau de cole</i> [glue water]		1	
Palomino, vol. 2	1715– 24	32	isolation or gesso	panel		<i>Cola de retazo de guantes</i> [ size made of glove clippings]			
Palomino, vol. 2	1715– 24	33	size	panel		<i>Cola de retazo</i> [ sizing made from clippings]	does not approve, swells due to humidity, blocks oil from penetrating wood	1	
Chambers	1728	735	size	canvas		<i>vorgeleimt</i> [sized]		1	
De la Hire	1730	708–9	size	panel		<i>cole chaude de cuir</i> [warm leather glue]		1	the size on which you have to work is scraped well
De la Hire	1730	710	size	canvas	<i>grand couteau</i> [large knife]	<i>cole de cuir qui doit etre figue</i> [leather glue which must be gelled]		1	backside of canvas scraped with knife, pumiced after it has dried



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Dionysios	1701– 33	Hetherin gton 6, ms. pp. 57–60	size	panel		dried glue, dissolved, add water to dilute it, and give them a thin coat of it. See that the glue does not form a shiny surface on the panels, and do not let bubbles form, but let it be absorbed by the wood		1	
Chomel	1743	948	size	canvas		<i>een lym</i> [a glue]		1	pumice to remove knots
Pictorius	1747	355	size	canvas	<i>doekje</i>	<i>heel dunne warm lymwater, tarwemeel</i> [very thin warm glue water, wheat flour]		1	
Barrow	1754	–	size	canvas		size, or paste-water		1	when dry, go over it with a pumice stone to smooth off the knots
Smith	1756	58	size	canvas		glew, ... of a moderate thickness, as it is requisite for a good size. Honey ... it will keep it from cracking		1	pumice before sizing
Pernety	1756		size	panel		<i>Colle de gand chaude</i> [warm glove glue]		1	Scrape side on which you work
Pernety	1756	lxcj	size	canvas	<i>Grand couteau</i> [large knife]	<i>Colle de gand, figée comme de la gêlée</i> [glove glue, stiff like a gel]		1	
<i>École de la mignature</i>	1759	173-4	size	canvas		<i>eau de colle</i> [glue water]		1	pumiced to remove knots
<i>École de la mignature</i>	1759	173	size	wood	<i>brosse</i> [brush]	<i>encollé avec la brosse</i> [glued with the brush]		1	
Watin	1772	190-1	size	canvas	<i>grand couteau de bois</i>	Colle de gands de moyenne force, qu'on puisse batter en consistance de bouillie ...Il faut que la colle soit suffisamment		1	excess glue removed with spatula, so nothing remains that

<i>author/ source</i>	<i>date</i>	<i>page</i>	<i>glue use</i>	<i>for support</i>	<i>tool</i>	<i>glue description (in original text and in translation)</i>	<i>negative result (summarised from recipe)</i>	<i>size layers</i>	<i>pumicing of size layer (summarised from recipe)</i>
					[large wooden knife]	forte pour qu'elle ne penetre pas de l'autre côté [averagely strong glove glue, which has been beaten into appropriate thickness or into slurry.. The glue must be sufficiently strong to prevent it from penetrating to the other side]			has not been absorbed by canvas. When dry, remove fibres with pumice stone
<i>Valuable secrets</i>	1775	133	size	panel		one coat of size		1	
<i>Valuable secrets</i>	1775	133–5	size	canvas		coat of size		1	when dry, rub with pumice stone to remove knobs and knots
<i>Nieuwen verlichter</i>	1777	166–7	size	canvas	<i>groot mes</i> [large knife]	<i>lym, gemaekt van snippelingen van handschoenen of van leer, het gene moet gestolt en verkout zyn.</i> [glue made from glove or leather clippings, which must be gelled and cooled]		1	excess glue is removed from back. When dry, rubbed with a well-flattened pumice stone to remove all knots and irregularities
<i>Nieuwen verlichter</i>	1777	170	size	panel		<i>warme lym gemaekt van leer, parkement ofte van snippelingen van handschoenen</i> [warm glue made from leather, parchment or glove clippings]		1	when dry, the side for painting is scratched lightly to smooth the first layer
Dutens	1779	62	size	panel		<i>colle de gant</i> [glove glue]		1	scrape the side on which you paint
Dutens	1779	62	size	canvas		<i>colle de gant</i> [glove glue]		1	
Le Pileur d'Apligny	1779	70	size	canvas		<i>colle mêlée avec un peu de miel</i> [glue mixed with a little honey]		1	pumice before sizing application

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Pernety	1781	8	size	panel	<i>brosse</i> [brush]	<i>encole avec la brosse</i> [glued with the brush]		1	
Pernety	1781	8	size	canvas		<i>Couche d'eau de colle</i> [layer of glue water]		1	
<i>Artist's assistant</i>	c.1785	93	size	canvas		size, or paste water		1	when dry, go over it with a pumice stone to smooth off the knots
<i>Secrets</i>	1801	150-1	size	wood	<i>brosse</i> [brush]	<i>colle</i> [glue]		1	
<i>Secrets</i>	1801	151-2	size	canvas		<i>eau de colle de gants</i> [glove glue water]		1	afterwards pumiced to remove knots
Ibbetson	1803	11, 1	size	canvas	brush	strong glue	[With whiting ground on top] it gets very stiff, and is hygroscopic	1	
Tingry	1803	Vol 2, 261-3	size	not specified		Seconde qualité de colle. Colle faite avec des rognures de gants ou de parchemin [ second quality glue. Glue made with glove clippings or parchment]			
Tingry	1803	vol 2, 263	size	not specified		<i>Troisième qualité de colle. Colle commune, colle de brochette</i> [third quality glue. Common glue, brochette glue]			
Jay	1817	558, 559	size	panel		<i>une colle légère</i> [a light glue]		1	
Bouvier	1827	567-8	size	canvas	<i>Grosse brosse de deux pouces de diamètre sur</i>	<i>Légère couche de colle de gants, dite colle de Flandre. Cette eau de colle doit être assez clair et tiède, afin qu'elle ne</i>			

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					<i>trois pouces de longueur</i> [large brush of two 'pouces' diameter and three 'pouces long]	<i>soit plus en consistance de gelée</i> [ a light layer of glove glue, also called Flanders glue. This glue water must be reasonably clear and tepid, so that it no longer has a gelled consistency]			
De Montabert	1829	159–60	size	canvas	<i>spatule ou amassète</i> [spatula or scraper]	<i>colle de peau ou de parchemin... en consistance de gelée</i> [skin glue or parchment glue ... with the consistency of a gel]		1	when dry, pumice and prevent the stone from making holes when removing the knots
De Montabert	1829	169	size	panel	[brush]	<i>bonne colle de parchemin en gelée ... apposez ... en état chaud et fluide</i> [good gelled parchment glue .. apply.. in warm and fluid state] <i>absinthe, ail, sel, vinaigre, eau</i> [absinthe, garlic, salt, vinegar, water]		1	
Mérimée	1830	242	size	canvas	<i>grand couteau</i> [large knife]	<i>... encollage, pour lequel on se sert de colle de gants figée</i> [sizing for which is used gelled glove glue]		1	when dry, knots are removed with a pumice stone
Field	1835	213	size	canvas		primed with size		1	
Fielding	1839	80, 81	size	canvas	brush	strong glue to lay the flue, and to prevent its absorbing any oil	worst and most dangerous: brittle, hygroscopic, flakes	1	
Sarsfield Taylor/ Merimee	1839	218–19	size	canvas	large palette knife or trowel	when the canvass is very open, and lets the colour through, it must be saturated with size made of glove parings ...		1	dry, it must be rubbed with pumice stone, to remove lumps

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Complete guide	1841	41	size	canvas	washed	a thin glue		1	
Susse brothers	1845	22	size	canvas, panel	<i>mes</i> [knife]	<i>lederlijm... zoveel mogelijk gelijkmatig</i> [leather glue ... as even as possible]		1	when dry pumiced
Field	1850	152, 153	size	panel		clear colling ... size of glue	liable to peel and scale off in damp places	1	
Francis	1854	70	size	canvas	washed	washed with a thin glue		1	
Williams	1855	10	size	muslin		gilders' or clear size ... prepared from parchment cuttings, and is to be procured at trifling cost, at shops where gilders' materials are sold		2	
Dietrich	1871	20	size	board		<i>--- die man erst mit Leim etwas tränkt. Der Leim muß Frisch sein, dünn und heiß, womöglich kochend aufgetragen worden</i>  [...which is first soaked with some glue. The glue must be fresh, thin and hot, if possible applied boiling]		1	pumiced to remove uneven areas
Sully	1873	035–36	size	canvas	large spatula	[Charles Wilson Peale's recipe] isinglass (fish glue) pounded on a flat iron into small pieces. Let it stand all night in water. In the morning put it on the fire to boil; there should be as much isinglass to the water as will form a jelly, after it has boiled and been allowed to cool. The canvas must be wet and pumiced to render the surface even. The jelly should be laid on with a large spatula		1	canvas pumiced before application of sizing
Church	1890	26	size	canvas		size or a solution of glue, this should be as free from colour as possible		1	

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Oughton	1892	36	size		panel	Sized		1	

**Table. 11.3: Results of analyses of reconstructed glues by Trobas Gelatine B.V.**

(Analyses with 6.67 % glue solutions)

<i>Raw material</i>	<i>Preparation details</i>	<i>Viscosity (mPs)</i>	<i>Bloom value ( Bloomgrams)</i>	<i>pH</i>	<i>Remarks</i>
<b>Goat's skin</b>					
	105 minutes 100 °C	18.2	--	3.7	Partially not soluble
	soaked, 105 minutes 100 °C	14.9	19	3.7	Very difficult to dissolve
	210 min 60 °C	11.8	70	3.6	Very difficult to dissolve
<b>Calf parchment</b>					
	105 minutes 100 °C	74.4	170	7.6	
	105 minutes 100 °C	54.9	136	7.6	
	soaked, 105 minutes 100 °C	77.8	164	7.7	
	105 min 60 °C	44.0	248	7.9	Mps estimated
	210 min 60 °C	22.0	218	7.8	Mps estimated
<b>Sheep parchment</b>					
	105 minutes 100 °C	39.1	148	7.2	
	soaked, 105 minutes 100 °C	35.6	137	7.4	
	210 min 100 °C	40.0	126	7.5	

**Table 11.4: Amounts of sizing (in grams) per cm<sup>2</sup> for a selection of glue sizings.**

<i>Glue type</i>	<i>Amount of glue per cm2</i>	<i>Amount of glue per cm2</i>	<i>Amount of glue per cm2</i>
Goat's skin glue, 100 °C for 105 minutes, liquid on closed weave canvas.	1 <sup>st</sup> layer: 0.028	1 <sup>st</sup> layer: 0.032 2 <sup>nd</sup> layer: 0.025	1 <sup>st</sup> layer: 0.029 2 <sup>nd</sup> layer: 0.039 3 <sup>rd</sup> layer: 0.015
Goat's skin glue, 100 °C for 105 minutes, gel on closed weave canvas	1 <sup>st</sup> layer: 0.021	1 <sup>st</sup> layer: 0.028 2 <sup>nd</sup> layer: 0.026	1 <sup>st</sup> layer: 0.027 2 <sup>nd</sup> layer: 0.023 3 <sup>rd</sup> layer: 0.022
Goat's skin glue, 100 °C for 105 minutes, liquid on open weave canvas.	1 <sup>st</sup> layer: 0.022	1 <sup>st</sup> layer: 0.025 2 <sup>nd</sup> layer: 0.012	1 <sup>st</sup> layer: 0.025 2 <sup>nd</sup> layer: 0.015 3 <sup>rd</sup> layer: 0.016
Goat's skin glue, 100 °C for 105 minutes, gel on open weave canvas	1 <sup>st</sup> layer: 0.020	1 <sup>st</sup> layer: 0.013 2 <sup>nd</sup> layer: 0.014	1 <sup>st</sup> layer: 0.013 2 <sup>nd</sup> layer: 0.010 3 <sup>rd</sup> layer: 0.011
Goat's skin glue, 100 °C for 105 minutes, liquid on jute canvas.	1 <sup>st</sup> layer: 0.03	1 <sup>st</sup> layer: 0.034 2 <sup>nd</sup> layer: 0.023	1 <sup>st</sup> layer: 0.056 2 <sup>nd</sup> layer: 0.024 3 <sup>rd</sup> layer: 0.023
Goat's skin glue, 100 °C for 105 minutes, gel on jute canvas	1 <sup>st</sup> layer: 0.037	1 <sup>st</sup> layer: 0.05 2 <sup>nd</sup> layer: 0.046	1 <sup>st</sup> layer: 0.038 2 <sup>nd</sup> layer: 0.031 3 <sup>rd</sup> layer: 0.034
Sheep parchment glue, 100 °C for 105 minutes, liquid on open weave canvas.	1 <sup>st</sup> layer: 0.038	1 <sup>st</sup> layer: 0.031 2 <sup>nd</sup> layer: 0.014	1 <sup>st</sup> layer: 0.038 2 <sup>nd</sup> layer: 0.014 3 <sup>rd</sup> layer: 0.011
Sheep parchment glue, 100 °C for 105 minutes, gel on open weave canvas.	1 <sup>st</sup> layer: 0.019	1 <sup>st</sup> layer: 0.018 2 <sup>nd</sup> layer: 0.015	1 <sup>st</sup> layer: 0.021 2 <sup>nd</sup> layer: 0.019 3 <sup>rd</sup> layer: 0.018
Calf parchment glue, 100 °C for 105 minutes, liquid on open weave canvas.	1 <sup>st</sup> layer: 0.029	1 <sup>st</sup> layer: 0.025 2 <sup>nd</sup> layer: 0.011	1 <sup>st</sup> layer: 0.029 2 <sup>nd</sup> layer: 0.010 3 <sup>rd</sup> layer: 0.010
Calf parchment glue, 100 °C for 105 minutes,	1 <sup>st</sup> layer: 0.014	1 <sup>st</sup> layer: 0.023	1 <sup>st</sup> layer: 0.023 2 <sup>nd</sup> layer:



<i>Glue type</i>	<i>Amount of glue per cm2</i>	<i>Amount of glue per cm2</i>	<i>Amount of glue per cm2</i>
gel on open weave canvas.		2 <sup>nd</sup> layer: 0.012	0.010 3 <sup>rd</sup> layer: 0.011
Goat's skin glue, 100 °C for 105 minutes, liquid on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.025	1 <sup>st</sup> layer: 0.028 2 <sup>nd</sup> layer: 0.015	1 <sup>st</sup> layer: 0.027 2 <sup>nd</sup> layer: 0.014 3 <sup>rd</sup> layer: 0.013
Goat's skin glue, 100 °C for 105 minutes, gel on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.029	1 <sup>st</sup> layer: 0.026 2 <sup>nd</sup> layer: 0.016	1 <sup>st</sup> layer: 0.029 2 <sup>nd</sup> layer: 0.015 3 <sup>rd</sup> layer: 0.016
Sheep parchment glue, 100 °C for 105 minutes, liquid on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.030	1 <sup>st</sup> layer: 0.031 2 <sup>nd</sup> layer: 0.011	1 <sup>st</sup> layer: 0.028 2 <sup>nd</sup> layer: 0.011 3 <sup>rd</sup> layer: 0.010
Sheep parchment glue, 100 °C for 105 minutes, gel on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.018	1 <sup>st</sup> layer: 0.018 2 <sup>nd</sup> layer: 0.011	1 <sup>st</sup> layer: 0.018 2 <sup>nd</sup> layer: 0.011 3 <sup>rd</sup> layer: 0.007
Calf parchment glue, 100 °C for 105 minutes, liquid on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.031	1 <sup>st</sup> layer: 0.027 2 <sup>nd</sup> layer: 0.011	1 <sup>st</sup> layer: 0.025 2 <sup>nd</sup> layer: 0.011 3 <sup>rd</sup> layer: 0.009
Calf parchment glue, 100 °C for 105 minutes, gel on open weave canvas, pumiced.	1 <sup>st</sup> layer: 0.0154	1 <sup>st</sup> layer: 0.016 2 <sup>nd</sup> layer: 0.013	1 <sup>st</sup> layer: 0.017 2 <sup>nd</sup> layer: 0.012 3 <sup>rd</sup> layer: 0.010