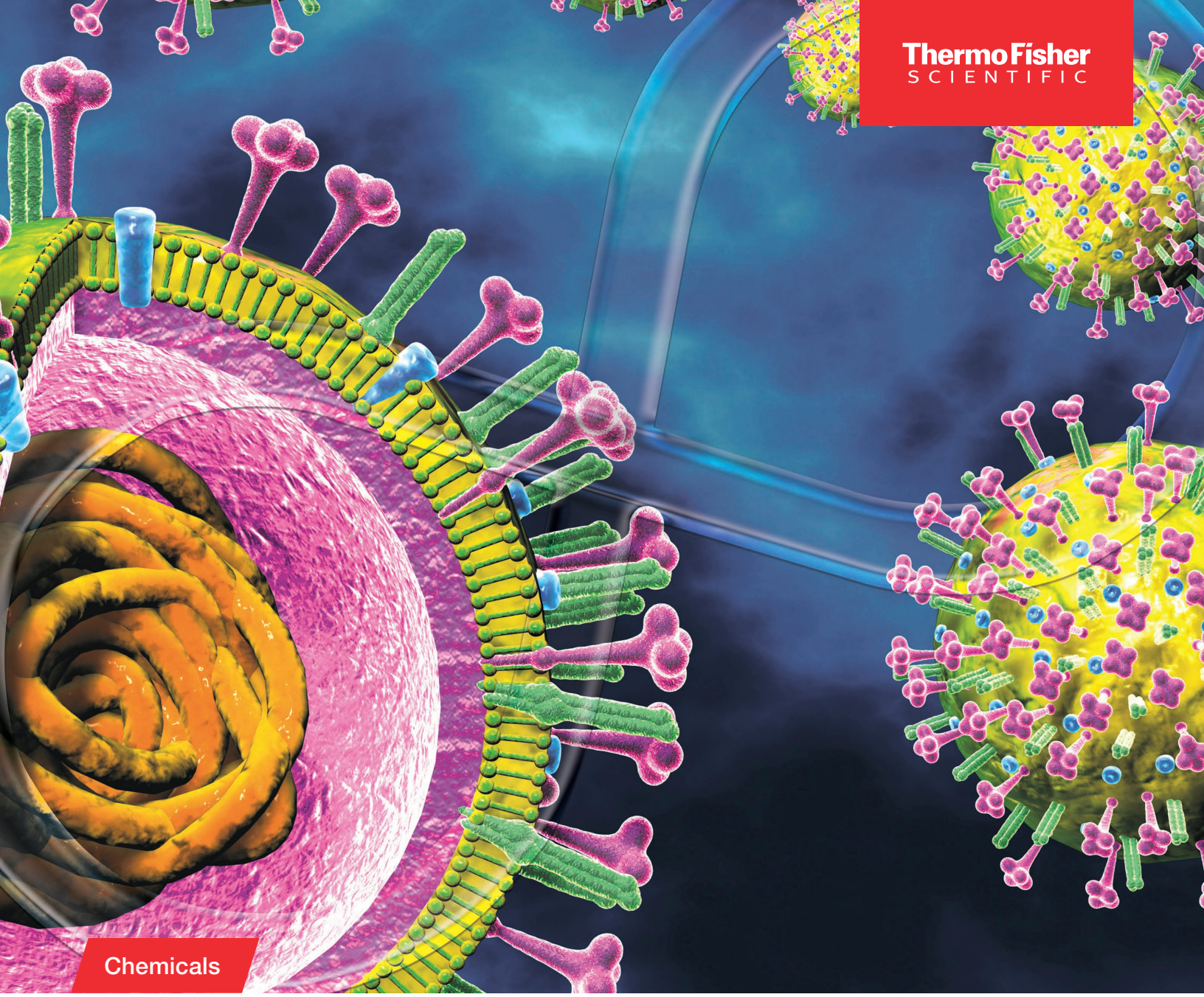


Thermo Fisher SCIENTIFIC

Chemicals

Guanidinium thiocyanate (GITC)

lysis buffers for nucleic acid extraction

thermo scientific

Lysis buffers to extract viral RNA

Guanidine thiocyanate is a potent chaotropic agent; thus, by interfering with the hydrogen bond network in aqueous solutions, it has a destabilising effect on macromolecules, especially proteins.
It is commonly used in cells and the lysis processes in virus particles to extract nucleic acids, as it denatures RNAse and DNAse enzymes[1] that would otherwise damage the extract.[2]

GITC lysis buffers to extract viral RNA are in growing demand, linked to the use of polymerase chain reaction (PCR) based assay.

Buffer composition (as reported by Scallan et al.[3]):

4 M Guanidinium thiocyanate (GITC)

55 mM* Tris-HCl

25 mM EDTA (Ethylenediaminetetraacetic acid)

3 % (v/v) Triton X-100

0.01 % (w/v) Bromophenol blue

(***NOTE**: calculated from the total amount of 0.1 M Tris pH 7.6 added, diluted by the degree of volume expansion observed when the GITC goes into solution)

Method to produce one litre of 4M Guanidinium thiocyanate (GITC)/Triton X-100 Lysis buffer:

1. 472.75 g of GITC is brought into solution initially by adding 400 ml of 0.1 M Tris HCl pH 7.6. This will require heating in a 65°C water bath and some shaking of the vessel (but with lid well secured). According to scientific literature, once fully dissolved the volume of the solution was 600 ml
2. Make up to 750 ml with 0.1 M Tris HCl pH 7.6
3. Add 50 ml of 0.5 M EDTA, mix
4. Add 30 ml Triton-X-100, mix
5. Volume made up to 1 L with 0.04 % (w/v) Bromophenol blue (DEPC-treated water can be used instead)

Note: Always read the chemical safety data sheet associated with the chemicals and carry out a full risk assessment.

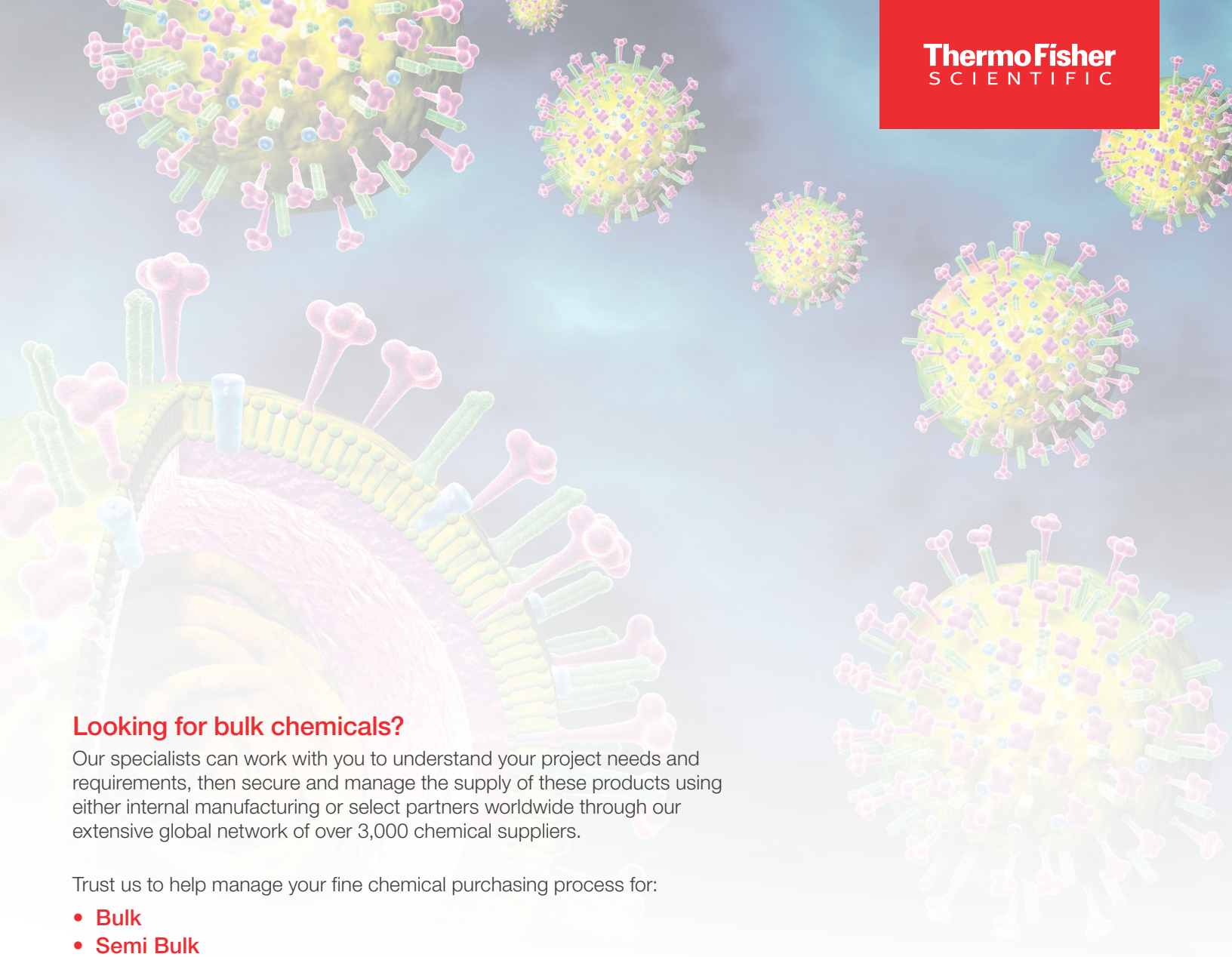
Within our Thermo Fisher Scientific Laboratory Chemicals portfolio we offer all the necessary products to prepare this lysis buffer solution with the correct specifications and in a range of convenient pack sizes. We also offer specialized custom services and can provide the products in bulk quantities if required.

Stock No.	Description	Pack size
32641-03	Bromophenol blue, ACS	1 g, 5 g, 25 g
A16899-09	Bromophenol blue sodium salt	10 g, 50 g
38693-AE	Bromophenol blue sodium salt, 0.04% w/v aq. soln.	100 mL, 500 mL
327201000	EDTA, disodium salt dihydrate,99+%, for molecular biology, DNAse, RNAse and protease free	100, 500 g, 2.5 kg
J65585-22	Ethylenediaminetetraacetic acid, electrophoresis grade, 99.4+%	100 g, 500 g, 2.5 kg
BP221-250	Guanidine thiocyanate powder assay: >=99.0 %	250 g, 1 kg
411111000	Guanidine thiocyanate, 99% (argentometric titration: >=98.5%)	100 g, 250 g, 1 kg
B21250-22	Guanidine thiocyanate, 99% assay (argentometric titration: ≥98.5 to ≤101.5%)	100 g, 250 g, 500 g
433941000	Guanidine thiocyanate, for molecular biology (argentometric Titration >=99.0 %)	100 g
J65104-18	Guanidine thiocyanate, molecular biology grade - assay (titration: 99.0% min.)	50 g, 250 g, 500 g
423795000	Hydrochloric acid, ACS reagent, ca. 37% solution in water	500 mL, 2.5 L
A412-212	Hydrochloric Acid (Technical), Fisher Chemical	2.5 L
BP152-1	Tris Base, molecular biology grade	500 g, 1 kg, 5 kg, 10 kg, 25 kg
J65594-A1	Tris(hydroxymethyl)aminomethane, ultrapure, 99.9%	1 kg, 5 kg
J22674-36	Tris, 99.0-101.0% (dry basis)	500 g, 1 kg, 5 kg, 10 kg, 25 kg
J75825-36	Tris, 99.8-100.1% (dry basis), molecular biology grade, ultrapure	500 g, 1 kg, 5 kg 10 kg
327371000	Triton™ X-100, 98%, for molecular biology, DNAse, RNAse and protease free	100 mL, 250 mL
J66624-AE	Triton™ X-100, electrophoresis reagent	100 mL, 500 mL, 2.5 L
J65589-AP	Water, endotoxin-free	500 mL, 5 L
BP2819-10	Water, molecular biology grade	100 mL, 1 L, 4 L, 10 L, 20 L
327390010	Water, for molecular biology, DNAse, RNAse and Protease free	1 L, 5 L
J70783-AC	Water, RNAse-free, DEPC treated, molecular biology grade, ultrapure	10 x 1 mL, 25 mL, 100 mL, 500 mL, 1 L

Bulk and semi-bulk quantities available

Thermo Fisher Scientific is an approved supplier for several pharmaceutical organizations globally. Several products, including **Guanidinium Thiocyanate** (product codes: **41111**, **B21250**, **43394**, **J65104**) are available in bulk and semi-bulk quantities in full compliance with local regulations.

For more information **thermofisher.com/chemicals**



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References

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